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Book Reviews

IN THIS ISSUE

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SAMUEL C. PATTERSON and G. R. BOYNTON are in the Department of Political Science at the University of Iowa, where both are associated with the department's Laboratory for Political Research. RONALD D. HEDLUND recently completed his doctorate at Iowa, and now is assistant professor of political science at the University of Wisconsin—Milwaukee. The article in this issue is one of a series of reports by the authors from the Iowa Legislative Research Project. A book, *Representatives and Represented*, is in process.

The late IAN WEINBERG was associate professor of sociology at the University of Toronto until his death on March 12, 1969. Born in England, he graduated from Oxford in 1960 with an honours degree in history, and received his Ph.D. in sociology from Princeton University in 1964. He is the author of *The English Public Schools* and editor and a major contributor to the forthcoming *English Society*. His major research interests lay in the sociology of education and modernization. He was an associate editor of *The American Sociologist* and a consulting editor of *Comparative Studies in Society and History*.

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FREDERICK ELKIN is chairman of the Department of Sociology at York University, Toronto. He is currently engaged in two major projects, one on advertising and social change in Quebec and the other on family life education in Canada.

REMI CLIGNET is associate professor of sociology at Northwestern University. He is coauthor with Phillip Foster of *The Fortunate Few* (Northwestern University Press, 1966) and the author of a variety of articles on the Ivory Coast. He has just finished, "Many Wives, Many Powers," a study of polygyny.

JOYCE SWEEN is a research associate in the department of sociology at Northwestern. She has published, with Mr. Clignet, "Accra and Abidjan: A Comparative Examination of Increasing Scale" (*Urban Affairs Quarterly*, March 1969). She has been director of computer operations and data processing for Northwestern's Center for Metropolitan Studies, and is currently engaged in research on familism.

Information for Contributors

Editorial Procedure: In order to provide complete impartiality in the selection of manuscripts for publication, all papers that are deemed appropriate for the *AJS* are sent out anonymously to readers. The editors rely heavily on the judgments of those readers, although they are not bound by them. To protect anonymity, only the title should appear on the manuscript. Attach a cover page with your name and affiliation. All identifying footnotes should appear on a separate page. Manuscripts are accepted for publication subject to nonsubstantive editing.

Preparation of Copy

1. Type all copy—including indented matter, footnotes, and references—double-spaced on white standard paper, allowing two-inch margins at top and bottom of page. Lines should not exceed six inches.

2. Type each table on a separate page. Refer to each table in order in the text. Prepare tables without vertical lines.

3. Draw figures on white paper with India ink. Submit original or glossy print of each figure with manuscript.

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Format of References in Text: All references to monographs, articles, and statistical sources are to be identified at an appropriate point in the text by last name of author, year of publication, and pagination where appropriate, all within parentheses. Footnotes are to be used only for substantive observations, and not for purpose of citation. There is no need for "*ibid.*," "*op. cit.*," or "*loc. cit.*"; specify subsequent citations of the same source in the same way as the first citation. Examples follow:

1. If author's name is in the text, follow it with year in parentheses, e.g., "Duncan (1959) has proven that . . ." If author's name is not in the text, insert at an appropriate point the last name and year, e.g., "some have claimed (cf. Gouldner 1963) that . . ."

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4. If there is more than one reference to the same author and year, distinguish them by use of letters (*a, b*) attached to year of publication, in text and in reference appendix, e.g., "as was previously suggested (Levy 1965*a*, p. 331) . . ."

5. Enclose a series of references within a single pair of parentheses, and separate by semicolons, e.g., "as many have noted (Johnson 1942; Perry 1947; Lindquist 1948) . . ."

Format of References: List all items alphabetically by author and, within author, by year of publication, in an appendix, titled "References." Use no abbreviations. For typing format, see the following examples:

Davis, K. 1963*a*. "The Theory of Change and Response in Modern Demographic History." *Population Index* 29 (October): 345–66.

———. 1963*b*. "Social Demography." In *The Behavioral Sciences Today*, edited by Bernard Berelson. New York: Basic Books.

Goode, W. J. 1967. "The Protection of the Inept." *American Sociological Review* 32 (February): 5–19.

Moore, Wilbert E., and Arnold S. Feldman. 1960. *Labor Commitment and Social Change in Developing Areas.* New York: Social Science Research Council.

Sanford, Nevitt, ed. 1962. *The American College.* New York: Wiley.

How to Ransack Social Mobility Tables and Other Kinds of Cross-Classification Tables[1]

Leo A. Goodman

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This article presents (1) methods for examining every part of a social mobility table in search of the various possible relationships between an individual's status category and his father's status category that are congruent with the data in the table; (2) methods for comparing two (or more) social mobility tables by examining the corresponding parts of each of the tables in search of the differences between the corresponding relationships in the tables; and (3) conceptual tools that can be used by the research worker to assist and stimulate him to conceive of a wide variety of possible relationships between an individual's status category and his father's status category, which could then be checked with the data. These tools and methods can also be applied to other kinds of cross-classification tables to assist in the conception and analysis of the various possible relationships between the column classification and the row classification of each table, and in studying the differences between the corresponding relationships in two (or more) such tables. The techniques presented here for studying the possible relationships between two qualitative variables (the column classification and the row classification) were obtained, in part, by adapting, for qualitative variables, some of the multiple-comparison ideas developed earlier in the analysis of variance context. To illustrate the application of the conceptual tools and methods proposed here, we reanalyze data on intergeneration social mobility in Britain and in Denmark. We find, for example, with the introduction of a new concept of "intrinsic status inheritance and status disinheritance," that there is a statistically significant amount of intrinsic status disinheritance in the middle status category in Britain and in Denmark, as well as statistically significant amounts of intrinsic status inheritance in the upper and lower status categories. (This result concerning status disinheritance is an apparent contradiction of all earlier findings based on the more usual methods of analysis.) Furthermore, there is more intrinsic status inheritance in the upper status category than in the lower, and the difference is statistically significant in both countries. Also, in contrast to all earlier findings, we find that the relationship between a subject's status and his father's status in the British study differs from the corresponding relationship in the Danish study in statistically significant ways which we describe in some detail.

1

In analyzing a given body of data, many of us have been taught that we should formulate the hypotheses which we might wish to test before we examine the data upon which the test is to be based, and that hypotheses which are suggested to us by a scanning of the data cannot then be tested using the same data. We have been warned (or we should have been warned) that the methods usually used for testing hypotheses can lead us astray if the particular hypotheses selected for testing are determined by first scanning the body of data to be tested. In the present article, we shall provide relatively simple methods for analyzing a given body of data, which are different from the usual methods, and which can be used by the research worker to test hypotheses which might be suggested to him by scanning the data, as well as hypotheses which he might have formulated beforehand. The methods presented here can be used when the body of data to be scanned, and later analyzed, consists of a cross-classification table or a set of cross-classification tables (e.g., a social mobility table for a given country or a set of social mobility tables for various countries).

A research worker cannot be expected to formulate beforehand (i.e., before scanning the data) all the hypotheses which he might later conceive of and which he might then wish to test. Indeed, the research worker's ability to conceive of hypotheses in the course of scanning a body of data is an important asset which he would do well to develop. In the present article, we shall also provide a general conceptual tool which can be used by the research worker to assist and stimulate him to *conceive* of hypotheses which he might then wish to test. In the analysis of a given cross-classification table, this tool can be used to assist in the formulation of a variety of hypotheses pertaining to the various relationships between the column classification of the table and the row classification (e.g., between an individual's status category and his father's status category as represented by the columns and rows, respectively, in an intergeneration social mobility table). In the analysis of a set of two (or more) cross-classification tables, this tool can be used to assist in the formulation of a variety of hypotheses pertaining to the difference between the tables with respect to the corresponding relationships between the column classification and the row classification of each table; for example, the difference between two (or more) countries with respect to the corresponding relationships between an individual's status category and his father's status category in each country.

As we have noted, the methods referred to above can be applied, for instance, to intergeneration social mobility tables in which the columns denote the possible status categories of the individuals (the respondents) and the rows denote the corresponding status categories for their fathers. These methods can also be applied to quite different kinds of cross-classification tables. In order to apply these methods, the number of columns in the table need not be equal to the number of rows in the table, and the column and row classifications can pertain to quite different variables (e.g., education and race). In social mobility tables, the column and row classifications pertain to the same kind of variable (e.g., status—subject's status and

father's status), and the tables are usually square (i.e., there are an equal number of columns and rows).

In this paper, we shall not discuss all the possible relationships between the column and row classifications of the table that may be of interest, but only some of the ones that appear to be relevant to the particular kind of cross-classification tables under study. For other kinds of cross-classification tables, the general conceptual tool presented here can lead to the formulation of quite different possible relationships between the column and row classifications of the table, which could then be checked with the data using the statistical methods here proposed.

The techniques proposed here were obtained, in part, by adapting, for qualitative variables, some of the multiple-comparison ideas proposed earlier in the analysis of variance context. This adaptation for the analysis of qualitative variables was carried out in an earlier series of articles by the present author (Goodman 1964b–e, 1965a) in which simultaneous confidence intervals and multiple-test procedures were developed for the simultaneous analysis of a variety of questions pertaining to a given qualitative variable or to a given set of qualitative variables.[2] In the present paper, we shall use some of the techniques introduced in this earlier series of articles together with a quite different set of techniques that were developed for the analysis of cross-classified data in which the entries in certain cells of the cross-classification table are omitted from the analysis because they are either missing, unreliable, void, or restricted in certain ways (see e.g., Goodman 1961b, 1963, 1964a, 1965b, 1968, and the literature cited there). We shall see how these two quite different kinds of contributions to our battery of methods for the analysis of qualitative variables can be brought together to shed further light on a single body of data.

The multiple-test procedures proposed herein for the analysis of qualitative variables can be used to overcome some of the methodological problems described by Stinchcombe (1964, p. 196) pertaining to the use of the same material in both the exploratory analysis and in the final survey, and they can also be used to perform some of the data-dredging functions described by Selvin and Stuart (1966) for survey analysis. These techniques provide a flexible yet systematic way to study a given qualitative variable or a given set of qualitative variables. It should, however, be noted that there are certain limits to the flexibility of these techniques. For example, in this article, our analysis of a given cross-classification table will be limited to the study of the various possible "multiplicative interactions" between the column and row classifications (i.e., between the status categories for the individuals and the status categories for their fathers). We shall consider a wide variety of multiplicative interactions between the column and row classifications, and we could, in principle, consider all such multiplicative interactions. But we will not consider here other kinds of interactions (between the column and row classifications) that need not be of the multi-

[2] For a discussion of multiple-comparison techniques in various contexts and for some historical perspective on the development of this field, see Miller 1966, and the literature cited there.

plicative kind.[3] The techniques described herein can be used to freely ransack cross-classification tables in order to search for the multiplicative interactions that are congruent with the data.[4]

It should also be noted that the methods presented here can be applied (1) when the cross-classified data describe either a simple random sample of individuals from a given population, or (2) when the data describe a stratified random sample in which the column categories (or the row categories) of the table form the strata that are sampled. These methods are approximate in the same sense that the usual χ^2 test for independence is approximate (i.e., justification for its use is based upon large-sample theory); and they involve the same order of approximation as does the usual χ^2 test. Application of the methods proposed herein can provide a much more thorough analysis of the data than is obtained with the usual χ^2 test.

THE INTERACTION IN EACH 2×2 SUBTABLE

For expository purposes, we shall use table 1 to illustrate the methods that we propose in this section. This table is based upon data obtained by Glass and his co-workers (1954).[5] It provides a cross-classification of a sample of 3,497 males in Britain according to each subject's occupational status category and his father's occupational status category.

We shall sometimes refer to the row and column categories in table 1 as the status categories pertaining to a subject's "origin" and "destination," respectively (see Duncan 1966). Looking at table 1, a research worker might select, as worthy of special attention, the particular 2×2 subtable obtained when, for example, we consider only U or M origins and U or M destinations (i.e., when we exclude from consideration all subjects whose origin category is L, and also all subjects whose destination category is L). This subtable is table 2.

From table 2, we see that the observed odds are 395 to 588 (i.e., 0.67 to 1.00) that an individual whose origin is U will have destination M rather than destination U; and that the observed odds are 714 to 349 (i.e., 2.05 to 1.00) that an individual whose origin is M will have destination M rather than destination U. The observed "risk" of having destination M (rather than destination U) is 0.67 for those whose origin is U, and it is 2.05 for

[3] Multiplicative kinds of interactions arise naturally with models that describe the expected entries in the cross-classification table as being affected in a multiplicative way by "row effects" (related to the row marginals), "column effects" (related to the column marginals), and "row $\times$ column interaction effects"; whereas other kinds of interactions between the column and row classifications arise with other kinds of models. For multiplicative interactions, see Goodman (1964b–d); for others kinds of interactions and related matters, see Goodman (1961a, 1964e, 1965a, c).

[4] These techniques could also be used to search simultaneously for the row effects and the column effects, as well as the interaction effects in the multiplicative model. For further details, see my article (1964d).

[5] The upper-, middle-, and lower-status categories in table 1 correspond to the occupational status categories 1–4, 5, 6–7, respectively, as defined by Glass. Table 1 was studied earlier by White (1963) and Goodman (1965b).

those whose origin is M.[6] The ratio of the risks is $2.05/0.67 = 3.05$.[7] Thus, comparing those whose origin is M with those whose origin is U, the observed "relative risk" of having destination M (rather than destination U) is 3.05 to 1.00. In other words, the observed risk is 3.05 times as great for those whose origin is M than for those whose origin is U. Since the relative

TABLE 1

CROSS-CLASSIFICATION OF A SAMPLE OF BRIT-
ISH MALES ACCORDING TO EACH SUBJECT'S
STATUS CATEGORY AND HIS FATHER'S STA-
TUS CATEGORY

FATHER'S STATUS	SUBJECT'S STATUS		
	U	M	L
U.............	588	395	159
M.............	349	714	447
L.............	114	320	411

NOTE.—This table referred to as British Sample in following tables.

TABLE 2

CROSS-CLASSIFICATION OF SAMPLE OF
BRITISH MALES: SUBJECT'S STA-
TUS CATEGORY, U OR M; FATHER'S
STATUS CATEGORY, U OR M

FATHER'S STATUS	SUBJECT'S STATUS	
	U	M
U...............	588	395
M...............	349	714

risk calculated above is actually the ratio of the observed odds (i.e., $2.05/0.67$), we refer to it as the "odds-ratio."

For those readers whose understanding is facilitated by an exposition using mathematical notation, we include the following remarks: If we let f_{ij} denote the observed frequency in the ith row ($i = 1,2$) and jth column ($j = 1,2$) of table 2, then the observed risk is f_{12}/f_{11} for those whose origin is U, and the observed risk is f_{22}/f_{21} for those whose origin is M. The observed

[6] The term "risk" as used here is synonymous with the odds of having destination M rather than U (see, for example, Gart 1962). This term has been used sometimes in the statistics literature to denote other things with which the usage here should not be confused.

[7] All numerical results presented in this article were carried out to more significant digits than are reported here. The results were then rounded off to fewer digits for the sake of of simplicity of exposition.

relative risk (i.e., the odds-ratio) is $(f_{22}/f_{21})/(f_{12}/f_{11})$, which is equal to $(f_{11}f_{22})/(f_{12}f_{21})$. The odds-ratio compares the relative magnitudes of the odds (f_{22}/f_{21}) with the odds (f_{12}/f_{11}), the odds (f_{11}/f_{12}) with the odds (f_{21}/f_{22}), the odds (f_{11}/f_{21}) with the odds (f_{12}/f_{22}), the odds (f_{22}/f_{12}) with the odds (f_{21}/f_{11}). Note that the odds-ratio is not influenced by either the absolute or relative sizes of the row marginal totals or by either the absolute or relative sizes of the column marginal totals.[8] Note also that the odds-ratio would remain unchanged if the 2×2 table was changed by relabeling the rows as columns and vice versa.[9]

If the column classification had been independent of the row classification for the 2×2 population table corresponding to table 2, then the odds-ratio (i.e., the relative risk) would have been 1 for this population, and the logarithm of the odds-ratio would have been zero. The logarithm of the observed odds-ratio (3.05) is actually 1.11.[10] We shall call the logarithm of the observed odds-ratio the "interaction" between the column and row classifications of the 2×2 table, and we shall use the symbol G to denote this interaction (see Goodman 1964b). In order to test the null hypothesis that the column classification is independent of the row classification in the 2×2 population table corresponding to table 2 (i.e., the null hypothesis that the interaction between the column and row classifications is zero for the 2×2 population table), we can compare the observed interaction G with zero, using the standard error of G as a gauge.

Again for those readers whose understanding is facilitated by the use of mathematical notation, we include the following: If we let g_{ij} denote the logarithm of f_{ij}, then the logarithm G of the observed odds-ratio is

$$
\begin{aligned}
G &= \log\left[(f_{11}f_{22})/(f_{12}f_{21})\right] \\
&= g_{11} + g_{22} - g_{12} - g_{21}.
\end{aligned}
\tag{1}
$$

Since the odds-ratio tells us what is the relative magnitude of one odds (say, f_{22}/f_{21}) compared with another odds (say, f_{12}/f_{11}) in a 2×2 table, when we compare the odds-ratios calculated for different 2×2 tables it would seem natural to examine the relative magnitudes of these odds-

[8] In other words, suppose that in the 2×2 table we make a transformation on the cell entries f_{ij} $(i = 1,2; j = 1,2)$ of the form

$$f_{ij} \rightarrow a_i b_j f_{ij},$$

where a_i and b_j are any positive numbers $(i = 1,2; j = 1,2)$. Then the odds-ratio calculated for the transformed table will be equal to the odds-ratio for the original table.

[9] For the 2×2 table, if a measure of association between the column and row classifications is a function of the proportion of the observations in the first row of the table that fall also in the first column and of the proportion of observations in the second row that fall also in the first column, and if this measure is invariant when the rows are relabeled as columns and vice versa, then the measure must be a function of the odds-ratio (see Edwards 1963, Goodman 1965c).

[10] Natural logarithms will be used throughout this article. For some tables of natural logarithms, see, for example, Fisher and Yates (1953) and Pearson and Hartley (1954).

ratios. An examination of the relative magnitudes of odds-ratios is facilitated by the calculation of the logarithms of the odds-ratios (i.e., by the calculation of the interactions) since differences between interactions reflect the relative magnitudes of the corresponding odds-ratios (i e., the difference between two interactions is equal to the logarithm of the relative magnitude of the corresponding odds-ratios). If the difference between two interactions remains unchanged, the corresponding relative magnitudes of the odds-ratios will remain unchanged.[11] Since we are interested in the relative magnitudes of odds ratios, we use the logarithmic scale of measurement; that is, we use the corresponding interactions.[12] We also note that the standard error S of the interaction G is of a particularly simple form, namely,[13]

$$S = (h_{11} + h_{22} + h_{12} + h_{21})^{1/2} \,, \tag{2}$$

where $h_{ij} = 1/f_{ij}$ for $i = 1, 2; j = 1, 2$.

Applying formula (2) to table 2, we see that the standard error S of the observed interaction G is[14]

$$S = \left[\tfrac{1}{588} + \tfrac{1}{395} + \tfrac{1}{349} + \tfrac{1}{714} \right]^{1/2} = 0.09 \,. \tag{3}$$

Thus, if we divide the observed interaction G by its standard error S, we obtain a value of

$$Z = G/S = 12.08 \,, \tag{4}$$

which is statistically significant when compared with the usual percentiles of the standardized normal distribution. (For a two-sided test at the 5 percent level of significance, the absolute value of Z would be compared with the constant 1.96, which is the 97.5th percentile of the standard

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[11] The reader familiar with differential calculus will also recall that

$$d \log x = (dx)/x \;;$$

i.e., if a small change occurs in x, then the relative change in x is equal to the change in the logarithm of x.

[12] As we noted earlier, the interactions defined in this paper also arise naturally with models that consider the expected frequencies in the cross-classification table as being affected in a multiplicative way by "row effects" (related to the row marginals), "column effects" (related to the column marginals), and "row × column interaction effects" (see Birch 1963, Goodman 1964d).

[13] The statistic (2) is an estimate of the standard deviation of G. Of course, other estimates of this standard deviation could also be considered, but we shall not do so here. Some comments on different estimates of the standard deviation appear in my article (1964d).

[14] As we noted in the preceding section, the methods presented here (formula [2] in particular) can be applied to data obtained by simple random sampling or by stratified random sampling of the kind described there. We use it here as an approximate gauge even though the data in table 1 were actually obtained by a kind of stratified sampling different from that described in the preceding section. For further discussion of this point, see my article (1965b).

normal distribution.) We shall call Z the standardized value of the inter-action G.[15]

Using the constant 1.96, we also obtain the following 95 percent confidence interval for the interaction in the population 2×2 table corresponding to table 2:

$$G^+ = G + 1.96S = 1.29$$
$$G^- = G - 1.96S = 0.93 .$$

(5)

The confidence interval for this interaction is from 0.93 to 1.29. Corresponding to this confidence interval, we obtain (with the aid of the table of natural logarithms) the following confidence interval for the odds-ratio in the population 2×2 table corresponding to table 2:[16]

$$R^+ = 3.65$$
$$R^- = 2.54 .$$

(6)

Recall that the observed value of the odds-ratio was $R = 3.05$.[17] Note that the confidence interval for the interaction (in the population 2×2 table) did not include zero, and the corresponding confidence interval for the odds-ratio (in the population 2×2 table) did not include 1.0.[18]

If we had decided to use table 2 (in order to test the null hypothesis that the column classification was independent of the row classification) before we had actually looked at the data in table 2 (or in the larger table 1), then the procedures described above would be legitimate. On the other hand, if we had actually selected the 2×2 subtable (table 2) from the larger 3×3 table (table 1) by noting which subtables of the 3×3 table would appear, at first sight, to provide strong evidence for the rejection of this null hypothesis, then the procedures described above would be illegitimate. In judging the statistical significance of the Z value (12.08) obtained for the 2×2 subtable, it would be necessary to take into account the fact that

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[15] The term "standardized value" of a statistic is used here to mean the ratio of the statistic and its standard error (as in formula [4]). The same or similar words have also been used elsewhere to denote other things with which the usage here should not be confused.

[16] We would use here the natural-logarithm table in, so to speak, inverted order (or equivalently a table of the exponential function) when we calculate R^+ and R^- from L^+ and L^-, respectively. For example, from the natural-logarithm table we find that 3.65 is the number which is such that its natural logarithm is 1.29. Some comments on other methods for calculating confidence intervals for the odds-ratios in the population 2×2 table appear in my article (1964b).

[17] We use the symbol R at this point in our article to denote the observed value of the odds-ratio, and we let R^+ and R^- denote the upper and lower confidence limits, respectively. This particular notation at this point in the article should not be confused with our use of the symbol R elsewhere in the article to denote the number of rows in the $R \times C$ cross-classification table.

[18] The confidence interval for this interaction will include zero (and the corresponding confidence interval for the odds-ratio will include 1) if and only if the absolute value of Z calculated by (4) is smaller than 1.96.

the subtable which was actually used was selected by an examination of the larger 3×3 table (table 1), and that other Z values (corresponding to the interactions in the other subtables of the 3×3 table) might have been considered too. If a test at the 5 percent level of significance is desired, it would not be correct to compare the Z value with the usual constant (viz., 1.96). We shall now indicate what is the correct constant with which to compare the Z value.

This problem was considered in my article (1964b) where I showed that either one of two constants would be appropriate. The first constant (which we shall present in the following paragraph) is appropriate when we cannot determine beforehand how many interactions may be of possible interest. The second constant (which we shall present in the second paragraph below) is appropriate when we can determine beforehand the interactions that may be of interest.[19]

To explain how the first appropriate constant is obtained, we first note that (a) a 2×2 table has 1 degree of freedom for testing the null hypothesis of independence using the usual χ^2 distribution, and (b) the constant 1.96 (considered earlier herein) is the square root of the 95th percentile of the χ^2 distribution with 1 degree of freedom. The constant 1.96 is appropriate if the 2×2 table (with its 1 degree of freedom), which is to be tested for independence, was selected before the data were scanned, and if only this one 2×2 table is to be tested. If the 2×2 table is a subtable from a larger table (say a 3×3 table), and if it was selected by scanning the larger table, then the size of the larger table is relevant in determining the appropriate constant. If the larger table (from which the 2×2 subtable was selected) was a 3×3 table, then we note that (a) a 3×3 table has $2 \times 2 = 4$ degrees of freedom for testing the null hypothesis of independence using the usual χ^2 distribution, and (b) the constant 1.96 should be replaced by the square root of the 95th percentile of the χ^2 distribution with 4 degrees of freedom (rather than 1 degree of freedom).[20] This con-

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[19] The second constant will depend upon the number of interactions that may be of possible interest, and it will increase as this number increases. In any particular case, if the second constant is larger than the first constant, then it can be replaced by the first constant since the first constant is appropriate even if an infinite number of interactions were of possible interest.

[20] The χ^2 distribution with four degrees of freedom is used here because the usual χ^2 statistic for testing the null hypothesis of independence in the 3×3 table has this as its large-sample distribution under the null hypothesis, and a modified form of this statistic (which has the same large-sample distribution under the null hypothesis) is related to the maximum value obtained when all possible interactions are calculated from the 3×3 table. For further details, see my article (1964b).

For the sake of convenience, the level of significance for each set of multiple tests presented herein will be the 5 percent level (or less), with the corresponding 95 percent of confidence for the related simultaneous confidence intervals. For any given set of interactions to be analyzed, if all the interactions in the set are equal to zero for the population cross-classification table (i.e., if the corresponding null hypothesis is true for the population), then the probability is at least .95 that the standardized value of *all* the interactions in the set (calculated from the sample data) will be smaller in absolute value than the constant recommended here.

stant is 3.08. More generally, if the larger table (from which the 2×2 subtable was selected) was a $R \times C$ table, then we note that (a) a $R \times C$ table has $(R - 1)(C - 1)$ degrees of freedom for testing the null hypothesis of independence using the usual χ^2 distribution, and (b) the constant 1.96 should be replaced by the square root of the 95th percentile of the χ^2 distribution with $(R - 1)(C - 1)$ degrees of freedom.

To explain how the second appropriate constant is obtained, we first note that (a) a 2×2 table has at most one interaction of possible interest, and (b) the constant 1.96 (considered earlier herein) is the absolute value of the 2.5th percentile of the standardized normal distribution. The constant 1.96 is appropriate if the 2×2 table (with its one interaction of possible interest), which is to be tested for independence, is the only 2×2 table to be tested, and if it was selected before the data were scanned. If the 2×2 table is a subtable from a larger table, and if some of the other interactions in the larger table (corresponding to other subtables in the larger table) may be of interest, then the appropriate constant to be used should depend upon how many interactions in the larger table are of interest. If there are at most, say, twenty different interactions of interest in the larger table, then the constant 1.96 should be replaced by the absolute value of the (2.5/20)th percentile (i.e., the 0.125th percentile) of the standardized normal distribution (rather than the 2.5th percentile). This constant is 3.02. More generally, if there are at most K different interactions of interest in the larger table, then the constant 1.96 should be replaced by the absolute value of the (2.5/K)th percentile of the standardized normal distribution.

To facilitate the use of these constants, we give their numerical values in table 3, using the 5 percent level of significance.[21] This table gives both the first appropriate constant when the relevant number of degrees is 1, 2, 3, . . . , 35; and the second appropriate constant when the maximum number of interactions of interest is 1, 2, 3, . . . , 35. Note that the second appropriate constant, when the maximum number of interactions of interest is say twenty, is smaller than the first appropriate constant when the number of degrees of freedom is 4. Note also that the first appropriate constant to be used for ransacking a cross-classification table is smaller in one case than another if the number of degrees of freedom is smaller, and that the second appropriate constant is smaller in one case than another if the maximum number of interactions of possible interest is smaller. The research worker who has a specific set of, say, twenty interactions that are of interest, can use a smaller constant than can the research worker who has not specified, in advance of scanning the data, the set of interactions that may be of interest. In situations where both the first and second appropriate constants can be calculated, we use the smaller of the two constants when a bound on the level of significance is specified and when we would want to reduce the probability of errors of the second kind (of accepting the null hypothesis when it is false).

Let us now suppose that the cross-classification table under consideration

[21] See the second paragraph of footnote 20.

is a 3×3 table (say table 1). Since a 3×3 table has $2 \times 2 = 4$ degrees of freedom for testing the null hypothesis of independence, all interactions of possible interest in this table can be calculated directly from a basic set of four different interactions. Each of the four interactions can correspond to the interaction in a 2×2 subtable. One possible basic set of 2×2 subtables of table 1 is given in table 4. From these four subtables (tables 1A, 1B, 1C, 1D described in table 4), we can calculate the interactions corresponding to the nine possible 2×2 subtables formed from table 1 as indicated in table 5. Each of the nine different subtables of table 1 is de-

TABLE 3

CRITICAL CONSTANTS FOR SET OF MULTIPLE TESTS AT
THE 5% LEVEL OF SIGNIFICANCE

DEGREES OF FREEDOM OR NUMBER OF TESTS OF POSSIBLE INTEREST	CRITICAL CONSTANTS		DEGREES OF FREEDOM OR NUMBER OF TESTS OF POSSIBLE INTEREST	CRITICAL CONSTANTS	
	(a)*	(b)†		(a)*	(b)†
1................	1.960	1.960	19...............	5.490	3.008
2................	2.448	2.241	20...............	5.605	3.023
3................	2.795	2.394	21...............	5.716	3.038
4................	3.080	2.498	22...............	5.824	3.052
5................	3.327	2.576	23...............	5.931	3.065
6................	3.548	2.638	24...............	6.034	3.078
7................	3.751	2.690	25...............	6.136	3.091
8................	3.938	2.734	26...............	6.236	3.102
9................	4.113	2.773	27...............	6.334	3.113
10................	4.279	2.807	28...............	6.429	3.124
11................	4.436	2.838	29...............	6.523	3.134
12................	4.585	2.865	30...............	6.616	3.144
13................	4.729	2.891	31...............	6.707	3.154
14................	4.867	2.914	32...............	6.797	3.163
15................	5.000	2.935	33...............	6.885	3.172
16................	5.128	2.955	34...............	6.972	3.180
17................	5.252	2.974	35...............	7.057	3.189
18................	5.373	2.991			

* Appropriate when an unlimited number of tests about interactions might be made in a cross-classification table having a specified number of degrees of freedom.
† Appropriate when the number of tests of possible interest is specified.

scribed in table 5 by noting which two columns, and which two rows, are being compared in the subtable. The first four interactions in table 5 are calculated directly from the basic set of subtables (table 1A, 1B, 1C, 1D described in table 4); and the other five interactions in table 5 (pertaining to tables 1E, 1F, 1G, 1H, 1I) can be calculated by adding the corresponding interactions obtained from the basic set (or equivalently by multiplying the corresponding odds-ratios and taking the logarithm of the product): table 1E (interaction 1A plus 1B); table 1F (interaction 1C plus 1D); table 1G (interaction 1A plus 1C); table 1H (interaction 1B plus 1D); table 1I (interaction 1E plus 1F).

Again for those readers whose understanding is facilitated by the use of mathematical notation, we include table 6, which gives the interactions in

TABLE 4

A BASIC SET OF 2 × 2 SUBTABLES OF BRITISH SAMPLE

TABLE 1A			TABLE 1B		
FATHER'S STATUS	SUBJECT'S STATUS		FATHER'S STATUS	SUBJECT'S STATUS	
	U	M		M	L
U............	588	395	U..........	395	159
M............	349	714	M..........	714	447

TABLE 1C			TABLE 1D		
FATHER'S STATUS	SUBJECT'S STATUS		FATHER'S STATUS	SUBJECT'S STATUS	
	U	M		M	L
M............	349	714	M..........	714	447
L............	114	320	L............	320	441

TABLE 5

INTERACTION BETWEEN SUBJECT'S STATUS AND FATHER'S STATUS IN EACH OF THE NINE 2 × 2 SUBTABLES OF THE BRITISH SAMPLE

FATHER'S STATUS COMPARISON	SUBJECT'S STATUS COMPARISON		
	U Compared with M	M Compared with L	U Compared with L
U compared with M.............	Table 1A: 1.11 (3.05)	Table 1B: 0.44 (1.56)	Table 1E: 1.56 (4.74)
M compared with L.............	Table 1C: 0.32 (1.37)	Table 1D: 0.72 (2.05)	Table 1F: 1.03 (2.81)
U compared with L.............	Table 1G: 1.43 (4.18)	Table 1H: 1.16 (3.19)	Table 1I: 2.59 (13.33)

NOTE.—Corresponding odds-ratio in parentheses.

TABLE 6

NINE INTERACTIONS IN TABLE 5 EXPRESSED IN TERMS OF THE LOGARITHM g_{ij} OF THE OBSERVED FREQUENCY f_{ij} IN THE iTH ROW (i = 1,2,3) AND jTH COLUMN (j = 1,2,3) OF THE 3 × 3 CROSS-CLASSIFICATION TABLE

FATHER'S STATUS COMPARISON	SUBJECT'S STATUS COMPARISON		
	U Compared with M	M Compared with L	U Compared with L
U compared with M.......	Table 1A: $g_{11} - g_{12} - g_{21} + g_{22}$	Table 1B: $g_{12} - g_{13} - g_{22} + g_{23}$	Table 1E: $g_{11} - g_{13} - g_{21} + g_{23}$
M compared with L.......	Table 1C: $g_{21} - g_{22} - g_{31} + g_{32}$	Table 1D: $g_{22} - g_{23} - g_{32} + g_{33}$	Table 1F: $g_{21} - g_{23} - g_{31} + g_{33}$
U compared with L.......	Table 1G: $g_{11} - g_{12} - g_{31} + g_{32}$	Table 1H: $g_{12} - g_{13} - g_{32} + g_{33}$	Table 1I: $g_{11} - g_{13} - g_{31} + g_{33}$

the nine 2×2 tables expressed in terms of the logarithms of the observed frequencies. Note that the interactions in table 6 corresponding to tables 1E, 1F, 1G, 1H can be obtained by direct calculation using the formulas in Table 6, or by adding the corresponding interactions obtained from the basic set of 2×2 subtables as noted in the preceding paragraph. For example, for table 1E we see that the corresponding interaction in table 6 is the sum of the interactions in table 6 pertaining to tables 1A and 1B.

Let us now suppose that the cross-classification table under consideration is a $R \times C$ table. Since a $R \times C$ table has $(R - 1)(C - 1)$ degrees of freedom for testing the null hypothesis of independence, all interactions of possible interest in the $R \times C$ table can be calculated directly from a basic set of $(R - 1)(C - 1)$ different interactions. Each of these interactions can correspond to the interaction in a 2×2 subtable. A basic set of 2×2 subtables can be obtained, for example, by selecting any given column (say, column C) and any given row (say, row R) of the $R \times C$ table, and then forming 2×2 subtables from the four cells that are in column C or in column j ($j = 1, 2, \ldots, C - 1$) and in row R or in row i ($i = 1, 2, \ldots, R - 1$). There will be $(R - 1)(C - 1)$ different subtables in the basic set, and from them we can calculate the interactions corresponding to the other 2×2 subtables formed from the $R \times C$ table. For the $R \times C$ table, we can compare each row with every other row (there are $R[R - 1]/2$ such comparisons), and each column with every other column (there are $C[C - 1]/2$ such comparisons), and so there will be $R(R - 1)\ C(C - 1)/4$ subtables; but all we need are the ones in the basic set (there were $[R - 1]$ $[C - 1]$ subtables in the basic set) in order to determine the others.

THE VARIOUS INTERACTIONS BETWEEN THE COLUMN AND ROW CLASSIFICATIONS

Note that each of the nine interactions presented in table 6 is of the following form:

$$G = \sum_{i=1}^{3} \sum_{j=1}^{3} a_{ij} g_{ij} , \qquad (7)$$

where g_{ij} is the logarithm of the observed frequency f_{ij} in the ith row and jth column ($i = 1, 2, 3; j = 1, 2, 3$), and where the a_{ij} are a set of constants that satisfy the following equations:

$$\sum_{j=1}^{3} a_{ij} = 0 , \qquad \text{for} \quad i = 1, 2, 3$$

$$\sum_{i=1}^{3} a_{ij} = 0 , \qquad \text{for} \quad j = 1, 2, 3 . \qquad (8)$$

Formula (8) states that if the constants a_{ij} are arranged as entries in a table of the form of table 1, then each row and each column of the table sums to zero.

As an example of formula (7), consider the interaction G calculated for table 2 (i.e., for table 1A of tables 4–6). From formula (1) or the corre-

sponding formula in table 6, we see that this interaction is obtained by taking $a_{11} = a_{22} = 1$, $a_{12} = a_{21} = -1$, and $a_{13} = a_{23} = a_{31} = a_{32} = a_{33} = 0$. In other words, the interaction G calculated for table 2 is the interaction (between the column and row classifications of the 3×3 cross-classification table) that blanks out the entries ($f_{13}, f_{23}, f_{31}, f_{32}, f_{33}$) in the five cells of the third column and the third row of the table.

Any set of constants a_{ij} that satisfy the set of equations (8) can be used to define an interaction G based upon formula (7). We noted above that each of the interactions pertaining to the nine 2×2 subtables (table 6) is of the form (7). Furthermore, the sum, or the average, of several such interactions will be of this form. For example, the average of the four interactions pertaining to tables 1A, 1E, 1G, and 1I will be of this form. Since these four subtables are the only 2×2 subtables having interactions that are directly affected (in a positive way) by the number of U subjects whose fathers are also U (i.e., by the entry in the $[U,U]$ cell), we shall refer to their average interaction as the interaction pertaining to status inheritance of U status (i.e., interaction $[U,U]$).[22]

From the corresponding formulas in table 6, we see that the interaction (U,U) can be expressed as

$$g_{11} - [\tfrac{1}{2}(g_{12} + g_{13} + g_{21} + g_{31}) - \tfrac{1}{4}(g_{22} + g_{23} + g_{32} + g_{33})] . \qquad (9)$$

Thus, this interaction is obtained by taking $a_{11} = 1$, $a_{12} = a_{13} = a_{21} = a_{31} = -\tfrac{1}{2}$, $a_{22} = a_{23} = a_{32} = a_{33} = \tfrac{1}{4}$. Here none of the entries in the 3×3 cross-classification table are blanked out. If the average interaction is zero in the four 2×2 subtables that include the entry in the (U,U) cell, then the interaction (9) will be zero, and g_{11} will be equal to the quantity in brackets in formula (9). The interaction (U,U) measures the degree to which g_{11} differs from the bracketed quantity in (9). This bracketed quantity is a function of the entries in cells other than (U,U), and it could serve as a "predictor" of g_{11} under the assumption that there is no interaction in the 2×2 subtables that include the (U,U) cell. The extent to which g_{11} actually differs from this predictor can reflect "status inheritance" of U status.[23]

[22] An individual's status category refers here to the particular category into which his occupation is classified (upper, middle, or lower status categories), and "status inheritance" refers to the probability that his status category (U, M, or L) will be exactly the same as his father's. Other terms for this concept of status inheritance may in some respects be preferable and in other respects not. This concept does not necessarily refer to the inheritance of genetic characteristics, nor does it refer to the individual's literal inheritance of his father's specific occupation, except insofar as these phenomena, in conjunction with other phenomena (e.g., socialization, education), may lead to an increase in the probability that an individual's status category is the same as his father's. Of course, if the boundaries that are used to define the status categories are changed, then the categories will pertain to a different classification of occupations, and the magnitude of the status inheritance will depend upon the particular classification under consideration.

[23] Our attention is focused here on the entry in the (U,U) cell, and we judge its relative magnitude by comparison with a certain function of the entries in the other cells in the

Having noted that the interaction (U,U) is given by formula (9), we can now define the interaction (L,L) and the interaction (M,M) by the following formulas:

$$g_{33} - \left[\tfrac{1}{2}(g_{13} + g_{23} + g_{31} + g_{32}) - \tfrac{1}{4}(g_{11} + g_{12} + g_{21} + g_{22})\right], \qquad (10)$$

$$g_{22} - \left[\tfrac{1}{2}(g_{12} + g_{21} + g_{23} + g_{32}) - \tfrac{1}{4}(g_{11} + g_{13} + g_{31} + g_{33})\right]. \qquad (11)$$

Note that the interaction (L,L) defined by (10) is the average of the interactions pertaining to the four 2×2 subtables (tables 1D, 1F, 1H, 1I) that are directly affected (in a positive way) by the entry in the (L,L) cell. The relationship between the interaction (M,M) defined by (11) and the interactions pertaining to the four 2×2 subtables (tables 1A, 1B, 1C, 1D) that are directly affected by the entry in the (M,M) cell is more complicated because the effect of the entry in the (M,M) cell is positive in tables 1A and 1D but negative in tables 1B and 1C (see corresponding formulas in table 6). Because of the positive and negative effects, the interaction (M,M) defined by (11) is actually the average of the following four quantities: the interactions pertaining to tables 1A and 1D and the negative of the interactions pertaining to tables 1B and 1C.

The difference between any two interactions of the form (7) will also be of this form. For example, the difference between interaction (U,U) and interaction (M,M) is of this form. This difference can be used to compare the magnitudes of the status inheritance of U status and of M status. Similarly, we take the difference between interactions (M,M) and (L,L) to compare the magnitudes of the status inheritance of M status and of L status; and we take the difference between interactions (U,U) and (L,L) to compare the magnitudes of the status inheritance of U status and of L status.

Note that tables 1E and 1G are the only 2×2 subtables that are directly affected by the entry in the (U,U) cells and are not affected directly by either the (M,M) cell or the (L,L) cell. The tables 1A and 1I, which we used earlier (together with tables 1E and 1G) in defining the interaction pertaining to status inheritance of U status, are affected by the (U,U) cells, but they are also affected by the (M,M) cell and the (L,L) cell, respectively. Excluding now tables 1A and 1I, we calculate the average of the interactions pertaining to tables 1E and 1G. We shall refer to this average as the interaction pertaining to intrinsic status inheritance of U status.

From the corresponding formulae in table 6, we see that the interaction

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cross-classification table. We could, of course, have written (9) in a form that would have drawn our attention to some other cell in the table or to some other phenomena that may be reflected in the table. We shall see later in this article that, in addition to status inheritance of U status, the interaction (U,U) given by (9) can reflect other phenomena as well. Because of this, we shall not be content with this measure, and shall introduce an alternative measure later in this section, namely, the interaction pertaining to the "intrinsic" status inheritance of U status.

pertaining to intrinsic status inheritance of U status can be expressed by the following formula:[24]

$$g_{11} - [\tfrac{1}{2}(g_{12} + g_{13} + g_{21} + g_{31} - g_{23} - g_{32})] \, . \tag{12}$$

Thus, this interaction is obtained by taking $a_{11} = 1$, $a_{12} = a_{13} = a_{21} = a_{31} = -\tfrac{1}{2}$, $a_{23} = a_{32} = \tfrac{1}{2}$, and $a_{22} = a_{33} = 0$. Here the entries in the cells (M,M) and (L,L) are blanked out. The interaction pertaining to intrinsic status inheritance of U status measures the degree to which g_{11} differs from the bracketed quantity in (12). This bracketed quantity is a function of the entries in the nondiagonal cells of the 3×3 cross-classification table, and it could serve as a "predictor" of g_{11} under the assumption that there is no interaction in tables 1E and 1G. The extent to which g_{11} actually differs from this predictor can reflect "intrinsic status inheritance" of U status.[25]

Having noted that the interaction pertaining to intrinsic status inheritance of U status is given by formula (12), we can now define the interactions pertaining to intrinsic status inheritance of L status and to intrinsic status inheritance of M status by

$$g_{33} - [\tfrac{1}{2}(g_{13} + g_{23} + g_{31} + g_{32} - g_{12} - g_{21})] \, , \tag{13}$$

and by

$$g_{22} - [\tfrac{1}{2}(g_{12} + g_{21} + g_{23} + g_{32} - g_{13} - g_{31})] \, , \tag{14}$$

respectively. The interaction (13) blanks out the entries in the cells (U,U) and (M,M), and it is the average of the interactions pertaining to tables 1F and 1H. The interaction (14) blanks out the entries in the cells (U,U) and (L,L), and it is the negative of the average of the interactions pertaining to tables 1B and 1C.

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[24] Note that formula (12) can also be expressed as the logarithm of

$$f_{11}/[(f_{12} f_{13} f_{21} f_{31})/(f_{23} f_{32})]^{1/2} \, .$$

A similar kind of remark applies to the formulas (1), (7), (9)–(16) herein.

[25] A remark similar to that made in the first two sentences of footnote 23 would be in order here too. It should also be noted that, if there is "quasi-perfect mobility" (i.e., "quasi-independence" between the column classification and the row classification) when the three diagonal entries in the 3×3 cross-classification table are blanked out (see Goodman 1965b, 1968, and related comments later in the present article), then the only phenomenon measured by the interaction (12) is the degree to which g_{11} is larger than its predictor (in that case, we have "intrinsic status inheritance") or smaller than its predictor (in that case, we have "intrinsic status disinheritance"). As noted in the earlier articles cited above, the data considered here do exhibit this quasi-perfect mobility. (Our use here of the general concept of "quasi-perfect mobility" to assist with the interpretation of the interaction [12] could also have been employed in footnote 23 to assist with the interpretation of the interaction [9], but in that case the particular kind of "quasi-perfect mobility" that would have been relevant would have been for the case where only the entry in the (U,U) cell of the 3×3 table is blanked out. That particular kind of quasi-perfect mobility is contradicted by the data.)

The sum of the interactions (12)–(14) is

$$(g_{11} + g_{22} + g_{33}) - [\tfrac{1}{2}(g_{12} + g_{13} + g_{21} + g_{23} + g_{31} + g_{32})] . \qquad (15)$$

We shall call this sum the interaction pertaining to intrinsic net status inheritance of all statuses.[26] We would, of course, also want to compare the magnitudes of the intrinsic status inheritance of U status and of M status, etc. The difference between, say, the interactions pertaining to intrinsic status inheritance of U status and of M status (as defined by formulas [12] and [14]) is actually equal to $\tfrac{3}{4}$ of the difference between the interactions (U,U) and (M,M) (as defined by formulas [9] and [11]). Thus, the standardized value of the former difference is identical with the standardized value of the latter difference. A similar remark also applies when U status and L status are compared, and when M status and L status are compared.

Let us now consider the interaction defined as follows:

$$G = g_{12} + g_{23} + g_{31} - g_{13} - g_{32} - g_{21} . \qquad (16)$$

For this interaction, $a_{12} = a_{23} = a_{31} = 1$, $a_{13} = a_{32} = a_{21} = -1$, and $a_{11} = a_{22} = a_{33} = 0$. The three diagonal cells are blanked out. This interaction is not affected directly by the number of subjects who are in the same status categories as their fathers. This particular interaction could also be obtained by subtracting the interactions pertaining to tables 1B and 1C (or to tables 1E and 1G, or to tables 1H and 1F). If this interaction calculated by formula (16) is zero for table 1, then the interactions in tables 1B and 1C are equal, the interactions in tables 1E and 1G are equal, and the interactions in tables 1H and 1F are equal. Furthermore, if the interaction calculated by formula (16) is zero, then the model of quasi-perfect mobility, as defined in my earlier article (1965b), will fit table 1 when the three diagonal cells are blanked out.[27]

We can formulate still other interactions, which may be of interest in a particular context, by specifying the set of cells that are to be blanked out, and then determining the possible values of the a_{ij} for the cells that are not blanked out (see, for example, formulas [1], [12]–[14], [16]). This can also be done by considering the interaction obtained by subtracting any pair of interactions of interest, or by considering the interaction obtained by adding together (or by averaging) any set of interactions of interest. By these methods we obtain other sets of a_{ij} that satisfy (8), and thus other interactions between the column and row classifications of the 3×3 table. To illustrate the methods presented here, we shall confine our attention to the particular twenty interactions defined in the preceding paragraphs: namely, the interactions pertaining to the nine 2×2 subtables; the interactions (U,U), (M,M), and (L,L); the differences between interactions

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[26] A remark similar to footnote 25 would apply here too.

[27] For a 3×3 cross-classification table in which the diagonal cells are blanked out, the definition of quasi-perfect mobility, as given in the article, is equivalent to the condition that the interaction (16) is zero for the corresponding population table; see my later article (1968) for further discussion of this point.

(U,U) and (M,M), between interactions (M,M) and (L,L), and between interactions (U,U) and (L,L); the interactions pertaining to the intrinsic status inheritance of U status, of M status, and of L status; the interaction pertaining to intrinsic net status inheritance of all statuses; and the interaction obtained by blanking out the diagonal cells.[28]

TABLE 7

STANDARDIZED VALUE OF 20 INTERACTIONS BETWEEN
SUBJECT'S STATUS AND FATHER'S STATUS IN
BRITISH SAMPLE

Interaction Due to	Standardized Value
U or M fathers and U or M subjects (table 1A)............................	12.08
U or M fathers and M or L subjects (table 1B).........................	3.96
U or M fathers and U or L subjects (table 1E).........................	13.59
M or L fathers and U or M subjects (table 1C).........................	2.49
M or L fathers and M or L subjects (table 1D).........................	7.49
M or L fathers and U or L subjects (table 1F).........................	8.10
U or L fathers and U or M subjects (table 1G).........................	11.26
U or L fathers and M or L subjects (table 1H).........................	9.68
U or L fathers and U or L subjects (table 1I)	18.70
Status inheritance of U status (interaction $[U,U]$).....................	19.45
Status inheritance of M status (interaction $[M,M]$)....................	3.69
Status inheritance of L status (interaction $[L,L]$).....................	15.32
Difference between interaction (U,U) and (M,M).....................	12.20
Difference between interaction (M,M) and (L,L)........................	− 9.47
Difference between interaction (U,U) and (L,L)	3.24
Intrinsic status inheritance of U status (with blank $[M,M]$ and $[L,L]$).....	16.53
Intrinsic status inheritance of M status (with blank $[U,U]$ and $[L,L]$).....	− 4.28
Intrinsic status inheritance of L status (with blank $[U,U]$ and $[M,M]$)....	11.64
Intrinsic net status inheritance of all statuses	20.19
Fathers and subjects with different statuses (with blank diagonal cells)....	0.78

The standard error of the interaction G defined by (7) can be calculated as follows:

$$S = \left(\sum_{i=1}^{3} \sum_{j=1}^{3} a_{ij}^2 \Big/ f_{ij} \right)^{1/2} . \qquad (17)$$

If we divide the observed interaction G by its standard error, we get the following standardized value:[29]

$$Z = G/S . \qquad (18)$$

For the data in table 1, the standardized values of the twenty interactions (between subject's status and father's status), described above, are given in table 7.

Each of the twenty interactions can be tested to see if it differs signifi-

[28] As we noted earlier, the standardized value of the difference between the interactions pertaining to intrinsic status inheritance of U status and of M status is equal to the standardized value of the difference between interactions (U,U) and (M,M). A similar remark also applies when U status and L status are compared, and when M status and L status are compared.

[29] See footnote 15.

cantly from zero. In each test, the absolute value of the corresponding Z would be compared with the constant 3.02 (rather than 1.96).[30] We see from table 7 that the largest standardized value pertaining to the 2×2 subtables is the one for table 1I (U or L fathers and U or L subjects), which is, however, smaller than the standardized values of the interaction pertaining to status inheritance of U status and of the interaction pertaining to intrinsic net status inheritance of all statuses. Furthermore, the interaction (U,U) is significantly larger than the interaction (L,L), which in turn is significantly larger than the interaction (M,M).

From table 7 we also see that, although the interaction (M,M) was positive, the interaction pertaining to intrinsic status inheritance of M status was negative, and that this negative value differed from zero in a statistically significant way. In the M status category, there was intrinsic status disinheritance, rather than status inheritance.[31] We shall return to this point in a later section.

Table 7 also shows us that the standardized value of the interaction obtained when the diagonal cells are blanked out is strikingly small.[32] This indicates that the model of quasi-perfect mobility fits the data in table 1 when the diagonal cells are blanked out. Although the method used here for studying quasi-perfect mobility is quite different from the method I used earlier (1965b), the conclusion concerning quasi-perfect mobility in table 1, which was arrived at in the earlier work, is confirmed by the present analysis.[33]

[30] See table 6 and related comments earlier in the present article. If the twenty interactions do not include all the interactions that may be of interest in the present context, then the constant 3.02 should be replaced by the appropriate constant which can be calculated once the total number of interactions of possible interest has been determined. If the total number of interactions of possible interest cannot be determined, then the constant 3.08 should be used instead of 3.02.

[31] Since the interaction pertaining to intrinsic status inheritance of M status (which we defined by formula [14]) was the negative of the average of the interactions pertaining to tables 1B and 1C, the negative value obtained in table 7 for the interaction pertaining to intrinsic status inheritance of M status describes the same phenomenon as the positive value obtained for the average of the interactions pertaining to tables 1B and 1C. The analysis presented herein will suggest that the data in table 1 reflect (a) quasi-perfect mobility for the nondiagonal entries, (b) status inheritance of U status and of L status, and (c) status disinheritance of M status. In particular we suggest that the data in tables 1B and 1C reflect (a) and (c). Although we "explain" the data in tables 1B and 1C by (a) and (c), other kinds of "explanations" of the data (which make use of other concepts) may also be possible; in which case, these other "explanations" of the data may also serve as "explanations" of the observed negative interaction pertaining to intrinsic status inheritance of M status (i.e., of the positive value obtained for the average interaction in the tables).

[32] Even if the constant 1.96 were used instead of 3.02, the observed value of Z would be strikingly small. Use of the constant 1.96 (rather than 3.02) would reduce the probability of errors of the second kind (of accepting the null hypothesis—that the corresponding interaction is zero—when it is false), but it would increase the probability of errors of the first kind (of rejecting the null hypothesis when it is true).

[33] With respect to the results presented in my earlier article concerning quasi-perfect mobility in the corresponding 3×3 table obtained from a sample of Danish males, the conclusions about these Danish data are also confirmed by the present method of analysis. In the next section, we shall compare the interactions in the British and Danish data.

We have discussed above the testing of a set of hypotheses concerning the various interactions between the column and row classifications of a cross-classification table. Formulas (7) and (17) can also be used to estimate the size of these interactions and to obtain simultaneous confidence intervals for them.[34]

COMPARING TWO (OR MORE) CROSS-CLASSIFICATION TABLES

To illustrate the methods presented in this section, we shall compare the British data (table 1) with the corresponding Danish data presented in table 8. This table is based upon data obtained by Svalastoga.[35] It provides a cross-classification of a sample of 2,391 males in Denmark according to each subject's occupational status category and his father's occupational status category.

TABLE 8

CROSS-CLASSIFICATION OF SAMPLE OF DANISH
MALES ACCORDING TO EACH SUBJECT'S
STATUS CATEGORY AND HIS FATHER'S STA-
TUS CATEGORY

FATHER'S STATUS	SUBJECT'S STATUS		
	U	M	L
U............	685	280	118
M............	232	348	198
L............	83	201	246

NOTE.—This table referred to as Danish sample in following tables.

From table 8 we can obtain a basic set of four 2 × 2 subtables (as in table 4), and from these four subtables we can then calculate the interaction in each of the nine 2 × 2 subtables (as in table 5). The results corresponding to table 4 are given in table 9 for the Danish data. Each of the nine different subtables of table 8 (tables 8A–8I) are described in table 9 by noting which two columns, and which two rows, are being compared in the subtable. For the data in table 8, we can also calculate (as in table 7) the standardized value of each of the twenty interactions considered in the preceding section. These values are given in table 10.

Although there are some differences between the pattern of standardized values given in table 10 (Danish sample) and those given in table 7 (British

[34] The actual magnitudes of the interactions (or the corresponding generalized odds-ratios), and the simultaneous confidence intervals for the interactions in the population, will often be of more interest than the corresponding standardized values given here. See my article (1964b) for further details. For simplicity of exposition, we have confined our attention here to the standardized values.

[35] The upper-, middle-, and lower-status categories in table 8 correspond to the occupational status categories 1–6, 7, 8–9, respectively, as defined by Svalastoga (1959).

sample), the particular comments which were made in the preceding section concerning the results presented in table 7 would apply as well to table 10. Note the following: (a) the size of the standardized value for the interaction pertaining to table 8I compared with the standardized values for the interactions pertaining to status inheritance of U status and to intrinsic net status inheritance for all statuses; (b) the standardized values for the differences between the interactions (U,U), (L,L), and (M,M); (c) the standardized value for the interaction pertaining to intrinsic status in-

TABLE 9

INTERACTION BETWEEN SUBJECT'S STATUS AND FATHER'S STATUS
IN EACH OF THE NINE 2 × 2 SUBTABLES OF THE
DANISH SAMPLE

FATHER'S STATUS COMPARISON	SUBJECT'S STATUS COMPARISON		
	U Compared with M	M Compared with L	U Compared with L
U compared with M.............	Table 8A: 1.30 (3.67)	Table 8B: 0.30 (1.35)	Table 8E: 1.60 (4.95)
M compared with L.............	Table 8C: 0.48 (1.61)	Table 8D: 0.77 (2.15)	Table 8F: 1.24 (3.47)
U compared with L.............	Table 8G: 1.78 (5.92)	Table 8H: 1.07 (2.90)	Table 8I: 2.85 (17.21)

NOTE.—Corresponding odds-ratio in parentheses.

TABLE 10

STANDARDIZED VALUE OF 20 INTERACTIONS BETWEEN SUBJECT'S STATUS
AND FATHER'S STATUS IN DANISH SAMPLE

Interaction Due to	Standardized Value
U or M fathers and U or M subjects (table 8A)........................	11.76
U or M fathers and M or L subjects (table 8B)........................	2.12
U or M fathers and U or L subjects (table 8E)........................	11.52
M or L fathers and U or M subjects (table 8C)........................	3.08
M or L fathers and M or L subjects (table 8D)........................	5.88
M or L fathers and U or L subjects (table 8F)........................	7.80
U or L fathers and U or M subjects (table 8G)........................	11.98
U or L fathers and M or L subjects (table 8H)........................	7.34
U or L fathers and U or L subjects (table 8I)........................	17.63
Status inheritance of U status (interaction $[U,U]$).....................	19.18
Status inheritance of M status (interaction $[M,M]$)....................	3.40
Status inheritance of L status (interaction $[L,L]$).....................	13.26
Difference between interaction (U,U) and (M,M)	11.13
Difference between interaction (M,M) and (L,L).......................	− 8.22
Difference between interaction (U,U) and (L,L).......................	3.49
Intrinsic status inheritance of U status (with blank $[M,M]$ and $[L,L]$).....	16.06
Intrinsic status inheritance of M status (with blank $[U,U]$ and $[L,L]$).....	− 3.49
Intrinsic status inheritance of L status (with blank $[U,U]$ and $[M,M]$)....	9.88
Intrinsic net status inheritance of all statuses...........................	18.30
Fathers and subjects with different statuses (with blank diagonal cells)....	− 0.91

heritance of M status; and (d) how small the interaction is when the diagonal cells have been blanked out.[36]

Each of the interactions calculated for the Danish sample could be compared with the corresponding interaction in the British sample. For an interaction G_1 in the British sample and the corresponding interaction G_2 in the Danish sample, we can calculate the difference

$$D = G_1 - G_2 . \tag{19}$$

The value of D is given in table 11 for the interactions pertaining to each of the nine 2 $\times$ 2 subtables of the 3 $\times$ 3 tables (tables 1 and 8). Note that

TABLE 11

DIFFERENCE BETWEEN BRITISH AND DANISH SAMPLES WITH RESPECT TO
THE INTERACTIONS* IN EACH OF THE NINE 2 $\times$ 2 SUBTABLES
OF EACH SAMPLE†

FATHER'S STATUS COMPARISON	SUBJECT'S STATUS COMPARISON		
	U Compared with M	M Compared with L	U Compared with L
U compared with M ..	Tables 1A and 8A: −0.18 (0.83)	Tables 1B and 8B: 0.14 (1.15)	Tables 1E and 8E: −0.04 (0.96)
M compared with L..	Tables 1C and 8C: −0.16 (0.85)	Tables 1D and 8D: −0.05 (0.95)	Tables 1F and 8F: −0.21 (0.81)
U compared with L...	Tables 1G and 8G: −0.35 (0.71)	Tables 1H and 8H: 0.09 (1.10)	Tables 1I and 8I: −0.26 (0.77)

NOTE.—Ratio of corresponding odds-ratios in parentheses.
* Interactions are between subject's status and father's status.
† Tables 1 and 8.

all but two of these differences are negative, which indicates that the interactions between subject's status and father's status in the Danish sample are somewhat larger on the whole than the corresponding interactions for the British sample. We shall gain some further insight into this matter later in the following section.

The standard error S_D of the difference D is calculated as follows:

$$S_D = (S_1^2 + S_2^2)^{1/2} , \tag{20}$$

where S_1 and S_2 are the standard errors of G_1 and G_2, respectively. As with formula (18), if we divide the observed difference D by its standard error, we get the standardized value

$$Z = D/S_D . \tag{21}$$

For the data in tables 1 and 8, the standardized value for the difference between the twenty interactions, which we considered earlier, are given in table 12.

[36] See footnote 33.

From table 12 we see that most of the standardized values are negative, and that none of them are statistically significant. Note that the three standardized values that are largest in absolute value pertain to various aspects of status inheritance of U status. (Table 1G is used in the calculation of the interactions pertaining to status inheritance of U status.) Thus, the interactions pertaining to status inheritance of U status are larger in

TABLE 12

STANDARDIZED VALUE OF DIFFERENCE BETWEEN BRITISH AND DANISH SAMPLES
WITH RESPECT TO 20 INTERACTIONS BETWEEN SUBJECT'S
STATUS AND FATHER'S STATUS

Interaction Due to	Standardized Value
U or M fathers and U or M subjects (tables 1A and 8A)	−1.30
U or M fathers and M or L subjects (tables 1B and 8B)	0.79
U or M fathers and U or L subjects (tables 1E and 8E)	−0.25
M or L fathers and U or M subjects (tables 1C and 8C)	−0.81
M or L fathers and M or L subjects (tables 1D and 8D)	−0.29
M or L fathers and U or L subjects (tables 1F and 8F)	−1.03
U or L fathers and U or M subjects (tables 1G and 8G)	−1.79
U or L fathers and M or L subjects (tables 1H and 8H)	0.50
U or L fathers and U or L subjects (tables 1I and 8I)	−1.20
Status inheritance of U status (interaction $[U,U]$)	−1.60
Status inheritance of M status (interaction $[M,M]$)	−0.44
Status inheritance of L status (interaction $[L,L]$)	−0.73
Difference between interaction (U,U) and (M,M)	−0.86
Difference between interaction (M,M) and (L,L)	0.28
Difference between interaction (U,U) and (L,L)	−0.71
Intrinsic status inheritance of U status (with blank $[M,M]$ and $[L,L]$)	−1.42
Intrinsic status inheritance of M status (with blank $[U,U]$ and $[L,L]$)	0.08
Intrinsic status inheritance of L status (with blank $[U,U]$ and $[M,M]$)	−0.39
Intrinsic net status inheritance of all statuses	−1.41
Fathers and subjects with different statuses (with blank diagonal cells)	1.20

the Danish study than in the British study, but the differences are not statistically significant.[37]

SOME RELATED METHODS FOR COMPARING TWO (OR MORE)
CROSS-CLASSIFICATION TABLES

Table 12 is useful when we wish to examine the difference between each of the twenty interactions in the British sample and the corresponding interactions in the Danish sample in order to determine which (if any) are significantly different from zero. If we are interested simply in an overall test of the null hypothesis that all of these differences are zero for the cor-

[37] We shall see in a later section that, when the U status category is divided into three separate status categories (i.e., when each of the individuals in the U status category is reclassified into one of three different high status categories rather than grouped into a single U category), the difference between the social mobility patterns in the British and Danish studies is statistically significant with respect to status inheritance among those in the three high status categories.

responding population tables, we would reject the null hypothesis if any of the twenty standardized values were greater in absolute value than 3.02.[38]

But if we are interested in an overall test of the null hypothesis that all the interactions in the British population table are equal to the corresponding interactions in the Danish population table, it is actually not necessary to calculate the standardized value for the differences between each interaction in the British and Danish samples, as we did in table 12. Indeed, if we were interested in *all* the interactions (i.e., in the difference corresponding to each interaction in the 3×3 tables), it would not be sufficient to study by this method only the twenty differences considered in table 12, since there may be some other interaction in the 3×3 tables that would lead to a significantly large standardized value for the corresponding difference even though none of the twenty differences did. We provide below procedures that are suitable for testing the null hypothesis that all the interactions in the British population table are equal to the corresponding interactions in the Danish table.

As we noted earlier, all the interactions in a 3×3 table (with its $2 \times 2 = 4$ degrees of freedom) can be calculated from a set of four interactions that pertain to a basic set of four 2×2 subtables. Similarly, all the differences between the corresponding interactions in two different 3×3 tables can be calculated from a set of four differences that pertain to the differences between the corresponding interactions in the basic set of 2×2 subtables. Taking tables 1A, 1B, 1C, and 1D as the basic set (together with the corresponding tables 8A, 8B, 8C, and 8D), we see from table 11 that the basic set of four differences are -0.18, 0.14, -0.16, -0.05, respectively. It is possible to test whether the observed basic vector $(-0.18, 0.14, -0.16, -0.05)$ differs significantly from the zero vector $(0,0,0,0)$. The null hypothesis that the basic vector of differences between the two populations is the zero vector is equivalent to the null hypothesis that *all* the interactions in the British population table are equal to the corresponding interactions in the Danish population table. Applying the test of this null hypothesis presented in my article (1964c), we obtain a χ^2 value of 4.09.[39] Since we are studying the differences between two 3×3 tables (with 4 degrees of freedom in the 3×3 table), the χ^2 value obtained (4.09) should be compared with the usual percentiles of the χ^2 distribution with 4 degrees of freedom.[40]

[38] If we do not limit the number of possible interactions that we might investigate by this method, then the constant 3.02 would be replaced by 3.08, as we noted earlier.

[39] The same χ^2 value would have been obtained even if a different basic set of four subtables had been used. For example, the basic set obtained with tables 1D, 1F, 1H, 1I (and the corresponding tables 8D, 8F, 8H, 8I), or with tables 1A, 1E, 1G, 1I (and the corresponding tables 8A, 8E, 8G, 8I), could have been used instead of the set obtained with tables 1A, 1B, 1C, 1D (and the corresponding Tables 8A, 8B, 8C, 8D). Indeed, a basic set can be formed corresponding to the following lines from tables 7 and 10: the first (tables 1A and 8A), the fifth (tables 1D and 8D), seventeenth (intrinsic status inheritance of M status), and twentieth (fathers and subjects with different statuses). For further discussion of this test, see the article.

[40] Note that the observed basic vector has four entries in it corresponding to the 4 degrees of freedom. More generally, when comparing S different $R \times C$ tables, there will be $(R - 1)(C - 1)(S - 1)$ degrees of freedom for the test discussed here.

Thus, the observed basic vector does not differ significantly from the zero vector.

As we noted above, the test of whether the interactions in one of the 3×3 tables differs significantly from the corresponding interactions in the other 3×3 table is a test of the null hypothesis that the differences between the corresponding interactions are all equal to zero for the population tables. The two 3×3 tables (tables 1 and 8) can also be viewed as a single $3 \times 3 \times 2$ table in which the rows, columns, and layers of the table denote the subject's status category of origin, status category of destination, and country of residence, respectively. The χ^2 test used in the preceding paragraph, which was presented in my article (1964c), is a test of whether there are no differences between the corresponding interactions in the two 3×3 population tables, and it can also be used to test the null hypothesis that

TABLE 13

CROSS-CLASSIFICATION OF BRITISH AND DANISH MALE
SAMPLES ACCORDING TO EACH SUBJECT'S STATUS CATE-
GORY AND HIS FATHER'S STATUS CATEGORY

FATHER'S STATUS	SUBJECT'S COUNTRY OF RESIDENCE	SUBJECT'S STATUS		
		U	M	L
U.............	Britain	588	395	159
	Denmark	685	280	118
M.............	Britain	349	714	447
	Denmark	232	348	198
L.............	Britain	114	320	411
	Denmark	83	201	246

all three-factor interactions in the $3 \times 3 \times 2$ population table are equal to zero. We shall comment further below on the χ^2 test used in the preceding paragraph, and also on a different test of this hypothesis.

The $3 \times 3 \times 2$ table can be rearranged as in table 13, in which we have a 2×3 table describing the pattern of mobility in Britain and in Denmark for those with U origins, and similarly two other 2×3 tables pertaining to those with M origins and those with L origins. The null hypothesis that all three-factor interactions in the $3 \times 3 \times 2$ table are equal to zero is equivalent to the hypothesis that the interactions in the 2×3 table pertaining to origin U are equal to the corresponding interactions in the 2×3 table pertaining to origin M, which in turn are equal to the corresponding interactions in the 2×3 table pertaining to origin L.[41] For each 2×3 table (with its 2 degrees of freedom), we can obtain a basic set of two 2×2 subtables (e.g., by comparing subject's status U with status M and subject's status M with status L), and for each subtable in the basic set we can calculate the interaction between its column and row classifications. These

[41] Note that this hypothesis states that the corresponding interactions in the three 2×3 tables are equal to each other. This hypothesis is quite different from the hypothesis that the interactions in the three 2×3 tables are all equal to zero.

interactions are given in table 14.[42] From this table we see that the hypothesis to be tested is that the three vectors $(-0.50, 0.05)$, $(-0.31, -0.10)$, and $(-0.15, -0.05)$, corresponding to origin U, M, and L, respectively, do not differ significantly from each other. The χ^2 test used in the paragraph before the preceding one can be used to test this hypothesis. We noted there that a χ^2 value of 4.09 (with 4 degrees of freedom) was obtained, which is not statistically significant.

From table 14 we see that the interactions pertaining to origin L are larger than the corresponding interactions pertaining to origin M, which in turn are larger than the corresponding interactions pertaining to origin U (except in the comparison of subject's status M with status L, where the interaction pertaining to origin U is larger than the other two). It is because

TABLE 14

INTERACTION BETWEEN SUBJECT'S STATUS AND COUNTRY OF RESIDENCE
FOR EACH CATEGORY OF FATHER'S STATUS

FATHER'S STATUS	SUBJECT'S STATUS COMPARISON		
	U with M	M with L	U with L
U....................	−0.50 (0.61)	0.05 (1.05)	−0.45 (0.64)
M....................	−0.31 (0.73)	−0.10 (0.91)	−0.41 (0.67)
L....................	−0.15 (0.86)	−0.05 (0.95)	−0.20 (0.82)

NOTE.—Corresponding odds-ratio in parentheses.

of this pattern in which the interactions decrease from origin L to origin M to origin U (with the exception noted above), that the differences presented in table 11 were all negative except in the comparison of subject's status M with status L, when the origin U is compared with the other two origins. Thus, the analysis of the data arranged as in table 13 sheds further light on the earlier analysis in which a different arrangement of the data was used.

As we have noted, the χ^2 test used here is a test of the null hypothesis that the three-factor interactions are zero in the $3 \times 3 \times 2$ table corresponding to tables 1 and 8 (or as described in table 13). A different method for testing this null hypothesis could be based upon the following procedure: First, estimate the frequencies that would be expected in the $3 \times 3 \times 2$ table under the assumption that the null hypothesis is true, and then compare these expected frequencies with the corresponding observed frequencies using the usual χ^2 goodness-of-fit statistic.[43] Applying this

[42] For the sake of completeness, we have also included in table 14 the interactions obtained when subject's status U is compared with status L, though these interactions are not part of the basic set. Note that each interaction pertaining to the comparison of subject's status U with status L is the sum of the corresponding interactions for the other two comparisons of subject's statuses.

[43] This procedure for testing the null hypothesis of no three-factor interaction, which we call the BFNRKLD test (for Bartlett-Fisher-Norton-Roy-Kastenbaum-Lamphiear-Darroch), is described in my article (1964c).

procedure to the data studied here, we obtain the expected frequencies given in table 15 and a value of 4.10 is obtained for the χ^2 goodness-of-fit statistic comparing the expected frequencies in table 15 with the corresponding observed frequencies in tables 1 and 8. This χ^2 value (4.10) should be compared with the usual percentiles of the χ^2 distribution with 4 degrees of freedom (as with the other χ^2 test used in this section).[44]

TABLE 15

PREDICTED MOBILITY PATTERN FOR BRITISH AND DANISH SAMPLES: INTERACTIONS BETWEEN SUBJECT'S STATUS AND FATHER'S STATUS IN BRITISH POPULATION ARE ASSUMED EQUAL TO THE CORRESPONDING INTERACTIONS IN DANISH POPULATION

FATHER'S STATUS	BRITISH SUBJECT'S STATUS			FATHER'S STATUS	DANISH SUBJECT'S STATUS		
	U	M	L		U	M	L
U...........	601.3	381.9	158.9	U...........	671.7	293.1	118.1
M...........	344.8	722.1	443.1	M...........	236.2	339.9	201.9
L............	104.9	325.1	415.0	L............	92.1	195.9	242.1

QUASI-INDEPENDENCE AND THE INTERACTIONS BETWEEN THE COLUMN AND ROW CLASSIFICATIONS OF A CROSS-CLASSIFICATION TABLE

If the column classification is independent of the row classification in a table (say, table 1), then all the interactions (between the column and row classifications of the table), as defined by formula (7) will be equal to zero, and vice versa. This relationship between the concept of independence in a cross-classification table and the interactions defined by formula (7) can be extended to a similar relationship between the concept of "quasi-independence" (or "quasi-perfect mobility"), as defined in my article (1965b), and a subset of these interactions.[45] For example, as we noted in an earlier section of the present paper, considering the 3 × 3 table (table 1) with the three cells on the main diagonal blanked out, if the column and row classifications are quasi-independent, then the interaction defined by formula (16) will be equal to zero, and vice versa. (Note that the constants a_{ij} in formula [16] are equal to zero for the three blanked out cells.) Similarly, considering the 3 × 3 table (table 1) with the two cells (M,M) and (L,L) blanked out, if the column and row classifications are quasi-independent, then the interactions defined by formulas (12) and (16) will be equal to zero, and vice versa. (Note that the constants a_{ij} in formulas [12] and [16] are equal to zero for the two blanked out cells.) More generally,

[44] See second sentence of footnote 40.

[45] The term "quasi-perfect mobility" was used in my article to refer to this concept, rather than the more general term "quasi-independence," in order to emphasize its applicability to social mobility tables. As was noted in that article, the concepts and methods developed there can also be applied to other kinds of cross-classification tables.

considering a cross-classification table with a subset of the cells in the table blanked out, and the corresponding subset of the interactions defined by formula (7) for which the constants a_{ij} are equal to zero for the cells that have been blanked out, if the column and row classifications in the table are quasi-independent, then the corresponding subset of the interactions will be equal to zero, and vice versa.[46]

This equivalence between the concept of quasi-independence and the corresponding subset of the interactions defined by formula (7) can shed further light on both the analysis of quasi-independence and on the analysis of interactions. For example, let us consider the following two null hypotheses: (a) quasi-independence in table 1 with the three diagonal cells blanked out; and (b) quasi-independence in table 1 with the two diagonal cells (U,U) and (L,L) blanked out. For each of these null hypotheses, the χ^2 goodness-of-fit statistic comparing the observed frequencies with the frequencies that would be expected (under the null hypothesis) can be calculated, and the values obtained are 0.61 and 20.20, respectively, for hypothesis (a) and (b).[47] From the preceding paragraph, we see that the null hypothesis (a) states that the interaction is zero when only fathers and sons with different statuses are considered (i.e., that the interaction due to fathers and sons with different statuses is zero in the population), and the null hypothesis (b) states that, in addition (to null hypothesis [a] being true), the interaction pertaining to intrinsic status inheritance of M status is zero. Since null hypothesis (b) is a special case of null hypothesis (a), by subtracting the corresponding two χ^2 values (20.20 − 0.61), the difference obtained (19.59) provides us with a χ^2 value (with 1 degree of freedom) for testing the null hypothesis that the interaction pertaining to intrinsic status inheritance of M status is zero, when the null hypothesis (a) is true.[48] Thus, comparing the difference (19.59) with the usual percentiles of the χ^2 distribution with 1 degree of freedom, we reject the null hypothesis that the interaction pertaining to intrinsic status inheritance of M status is zero.[49]

[46] For further details, see my article (1968).

[47] These numerical results were given in my article (1965b). In addition to the χ^2 goodness-of-fit statistics, that article gave several other methods for comparing the expected frequencies with the observed frequencies. For the sake of simplicity and brevity, we shall not discuss these other methods here, though they are useful.

[48] As was noted in my article (1965b), the difference has 1 degree of freedom in the present context; it is the difference between a χ^2 value with 2 degrees of freedom and a χ^2 value with 1 degree of freedom. In the earlier article, the corresponding value based upon the likelihood-ratio statistics was used, rather than the goodness-of-fit statistics.

[49] Note that the difference obtained (19.59) is of the same order of magnitude as the square of the standardized value Z (in table 7) corresponding to the interaction pertaining to intrinsic status inheritance of M status. Note also that the value obtained (0.61) for the goodness-of-fit statistic for testing null hypothesis (a) is of the same order of magnitude as the square of the standardized value Z (in table 7) corresponding to the interaction pertaining to fathers and sons with different statuses. Under the null hypothesis (a), the value obtained for the goodness-of-fit statistic is asymptotically equivalent to the corresponding Z^2; and a similar remark applies to the difference obtained under the null

The preceding calculations were based upon the British data (table 1). A similar analysis of the Danish data (table 8) could be made. The conclusions obtained with the Danish data are similar to those presented above.

QUASI-HOMOGENEITY AND THE DIFFERENCES BETWEEN THE INTERACTIONS IN TWO (OR MORE) CROSS-CLASSIFICATION TABLES

As we noted in the preceding section, the concept of quasi-independence is a generalization of the usual concept of independence in the $R \times C$ cross-classification table which is suited to the situation where the entries in certain cells of the table are blanked out. It states that all the interactions (between the column and row classifications of the table), which are calculated from the cells that are not blanked out, are equal to zero. Similarly, the concept that two different $R \times C$ tables are homogeneous (with respect to the corresponding interactions in each table) can be generalized to obtain the concept of "quasi-homogeneity" of the two $R \times C$ tables. This concept is suited to the situation where the corresponding entries in certain cells of each table are blanked out.[50] It states that the differences between the corresponding interactions in each table are equal to zero, when we consider only those interactions which are calculated from the cells that are not blanked out. We shall now illustrate the application of this concept of quasi-homogeneity by reconsidering the comparisons of tables 1 and 8 presented earlier.

We noted in the section before the preceding one that the null hypothesis that the two population tables were homogeneous (with respect to the corresponding interactions in each table) could be tested by first calculating the frequencies that would be expected in the tables under the assumption that the null hypothesis is true (see table 15), and then comparing these expected frequencies with the corresponding observed frequencies using the usual χ^2 goodness-of-fit statistic. We obtained, by this method, a value of 4.10 for the χ^2 goodness-of-fit statistic (with 4 degrees of freedom). With this observed value, we would not reject the null hypothesis of homogeneity. Recall, however, that in our earlier analysis of the differences between the interactions in tables 1 and 8 (see table 12), when considering the three standardized values that were largest in absolute value, we found that all of these pertain to various aspects of status inheritance of U status. We shall now consider briefly the null hypothesis of quasi-homogeneity of tables 1 and 8 when the fathers and sons with the same U status (i.e., cell $[U, U]$) are blanked out.

With respect to this null hypothesis, the expected frequencies for the

hypothesis (b). As in the earlier analysis of the Z values, if all the interactions in table 1 were of possible interest, then the relevant percentiles in judging each Z^2 value (or the corresponding χ^2 values) are obtained from the χ^2 distribution with 4 degrees of freedom.

[50] The concept can also be applied in some situations where a different set of cell entries has been blanked out in each $R \times C$ table. For further details, see my article (1968).

British and Danish data (i.e., the frequencies expected under the null hypothesis) can be calculated using the methods described in my article (1968). These expected frequencies are given in table 16 herein. These are the frequencies that would be expected under the assumption that the British and Danish population tables are quasi-homogeneous (with respect to the corresponding interactions between the column and row classifications) when subjects with the same U status as their fathers are blanked out in each country. Note that by blanking out the cell (U,U) in both the British and Danish data, we are calculating the expected frequencies in the other cells without assuming that status inheritance of U status is the same in both countries (i.e., we are taking into account the actual status inheritance of U status in each country without assuming them to be equal).

TABLE 16

PREDICTED MOBILITY PATTERN FOR BRITISH AND DANISH SAMPLES: STATUS INHERITANCE IN THE UPPER CATEGORY IN EACH SAMPLE IS TAKEN INTO ACCOUNT AND THE INTERACTIONS* THAT DO NOT INVOLVE THIS STATUS INHERITANCE IN BRITISH POPULATION ARE ASSUMED EQUAL TO THE CORRESPONDING INTERACTIONS IN DANISH POPULATION

FATHER'S STATUS	BRITISH SUBJECT'S STATUS			FATHER'S STATUS	DANISH SUBJECT'S STATUS		
	U	M	L		U	M	L
U.	588.0†	390.8	163.2	U.	685.0†	284.2	113.8
M.	354.2	715.4	440.3	M.	226.8	346.6	204.7
L.	108.8	322.8	413.5	L.	88.2	198.2	243.5

* These interactions are between subject's status and father's status.

† These cells were blanked out when calculating the predicted mobility pattern for the cells that were not blanked out. The frequencies, which are given here in the cells that were blanked out, are the observed frequencies.

The value of 1.56 is obtained for the χ^2 goodness-of-fit statistic (with 3 degrees of freedom). Comparing this value (1.56) with the value of 4.10, which was obtained in the preceding paragraph, we see that the differences between the two countries (with respect to the interactions between subject's status and father's status) can be accounted for, to a rather large extent, by the difference in status inheritance of U status in these countries. In a later section, we shall see that a related difference between the two countries is even more pronounced.[51]

INTRINSIC STATUS INHERITANCE AND DISINHERITANCE

If the methods usually used to analyze social mobility tables (e.g., by calculating the usual mobility ratios) were applied to analyze tables 1 and 8, they would have left the impression that there was "status inheritance"

[51] See footnote 37.

in status category M. The index of immobility[52] for the M status category, which is based on the usual mobility ratio (i.e., it is the ratio of the observed frequency in cell (M,M) and the frequency expected under the assumption of perfect mobility), is greater than 1.00; namely, 1.16 and 1.29 for tables 1 and 8, respectively. In apparent agreement with this, the interaction pertaining to status inheritance (interaction $[M,M]$) is positive in both countries (see tables 7 and 10). But the mobility ratio and this particular interaction do not measure what they appear to measure; the magnitudes of the intrinsic status inheritance of the U and L statuses confound the meaning of this particular ratio and this interaction.[53] Because of this confounding, we introduced here the interactions pertaining to the intrinsic status inheritance of each status category, and we then found that it was negative for the M status category in both countries. Thus, there is actually an intrinsic status disinheritance (rather than inheritance) in the M status category of both countries.[54]

We noted above that the mobility ratio (and the corresponding index of immobility) did not measure what it appeared to measure, since it compared the observed frequency with an expected frequency that is affected by the relative magnitudes of the intrinsic status inheritance and disinheritance in the various status categories. This difficulty can be remedied by calculating a different set of "expected" frequencies by the following procedure: First, since the model of quasi-independence fit the data when the diagonal cells were blanked out, we use this model to calculate the "expected" frequencies in the cells that are not blanked out, and then from these "expected" frequencies (or, more directly, from the estimates of the parameters of the model from which the "expected" frequencies were calculated) we calculate the frequencies in the blanked cells that would make the pattern of "expected" frequencies conform to a pattern of independence (between the column and row classifications) in the entire cross-classification table. By a straightforward extension of the method I developed earlier (1965b), we obtain the "expected" frequencies in table 17.

[52] The terms "status immobility," "status inertia," "status stability," "status persistence," "status inheritance," "status association," which appear in the published literature, all refer to the same phenomenon; namely, the tendency for there to be a concentration of observations in the cells on the main diagonal (see, e.g., Rogoff 1953; Carlsson 1958).

[53] Since intrinsic status inheritance of the U and L status categories means that the observed frequencies in the cells (U,U) and (L,L) will be "too large" (in a certain specific sense), these larger frequencies will increase the column and row marginal totals pertaining to both the U and L status categories; and thus the size of the column and row marginals pertaining to the M status category will be decreased relative to the other status categories. With this relative decrease in the marginals pertaining to the M status category, we obtain a decrease in the expected frequency in the (M,M) cell (calculated under the assumption of perfect mobility); and thus the ratio of the observed to the expected frequency in the (M,M) cell is raised above 1.0. This should help to explain why the observed mobility ratio is greater than 1.0. The observed interaction (M,M) is positive for a similar kind of reason.

[54] See footnote 31.

By comparing the observed frequencies with the corresponding "expected" frequencies in table 17, we obtain a new set of "mobility ratios" which lead to quite different conclusions from the usual mobility ratios.[55] For example, confining our attention for the moment to the diagonal cells, these new ratios (which we shall call the "new indices of immobility" when they are calculated for the diagonal cells) are given in table 18. For both Britain and Denmark, the new index of immobility pertaining to status M

TABLE 17

PREDICTED MOBILITY PATTERNS FOR BRITISH AND DANISH SAMPLES: STATUS
INHERITANCE (OR DISINHERITANCE) IN EACH STATUS CATEGORY IS TAKEN
INTO ACCOUNT AND QUASI-INDEPENDENCE* IS ASSUMED

FATHER'S STATUS	BRITISH SUBJECT'S STATUS			FATHER'S STATUS	DANISH SUBJECT'S STATUS		
	U	M	L		U	M	L
U..........	131.1†	390.2	163.8	U..........	127.2†	284.7	113.3
M..........	358.8	1052.9†	442.2	M..........	227.3	509.1†	202.7
L..........	109.2	324.8	136.4†	L..........	87.7	196.3	78.2†

* This quasi-independence is between subject's status and father's status.

† These cells were blanked out when calculating the predicted mobility pattern for the cells that were not blanked out. The frequencies, which are given here in the cells that were blanked out, are the frequencies that would make the predicted mobility pattern conform to a pattern of "perfect mobility" for the entire cross-classification table.

TABLE 18

NEW INDEX OF STATUS IMMOBILITY FOR EACH STATUS CATEGORY
IN BRITISH AND DANISH SAMPLES, AND CORRESPONDING INDEX
OF IMMOBILITY BASED ON USUAL MOBILITY RATIO

STATUS CATEGORY	BRITISH SAMPLE		DANISH SAMPLE	
	New Index	Usual Index	New Index	Usual Index
U..............	4.48	1.71	5.39	1.51
M..............	0.68	1.16	0.68	1.29
L..............	3.01	1.67	3.15	1.97

[55] Although the usual mobility ratios are supposed to measure the degree of mobility in a way that is "independent," in a certain sense, of the effects of the column and row marginal distributions, we have noted that they do not do so in situations where the observed marginal distributions are themselves affected by other phenomena (e.g., by intrinsic status inheritance of L and U statuses). In these situations, the new mobility ratios presented here take into account (and adjust for) the effects of these phenomena as well as the effects of the column and row marginal distributions. The new mobility ratios are calculated by replacing the observed column and row marginals by "theoretical" column and row marginals that describe what the size of the marginals would have been in a hypothetical situation in which the effects of these phenomena are nil. The "theoretical" marginals are calculated (as in my article [1964a]) using only cell entries in the table that are not affected directly by the phenomena. We use a set of cells that exhibits quasi-independence between the column and row classifications.

is smaller than one, whereas the usual index is larger than one.[56] There are actually fewer individuals in the (M,M) cell of the cross-classification tables (tables 1 and 8) than would be "expected" in table 17, and more individuals in the (U,U) and (L,L) cells than would be "expected."

Since the sum of the "expected" frequencies in table 17 for the cells that had not been blanked out (i.e., the nondiagonal cells) is equal to the sum of the corresponding observed frequencies in those cells, we find that the sum of the frequencies in all the cells of this table will usually not be equal to the sum of the corresponding observed frequencies. Indeed, the relative difference between the totals (in all the cells) provides us with a measure of one aspect of the net amount of status "persistence" in the tables.[57] This measure tells us what proportion of the individuals in the observed sample would need to be added to the diagonal cells of table 17 in order to make the total of the frequencies in this table (with the added individuals) equal the observed sample size. Calculating this measure for the British and Danish samples, we obtain 0.11 and 0.24, respectively.

In addition to the usual calculation of the mobility ratios, various other measures, which are based upon a comparison of the observed frequencies with the usual expected frequencies (calculated under the assumption of perfect mobility), have been suggested by other writers.[58] Replacing the expected frequencies as usually calculated by the "expected" frequencies as calculated in table 17, we would now obtain a variety of new measures, analogous to those presented earlier, but capable of leading to entirely different conclusions (as was the case illustrated in table 18). We shall not go into these details here.

We shall now comment upon the relationship between the new index of immobility in table 18 and the interactions pertaining to intrinsic status inheritance which were introduced earlier in this article. Recall that the interaction pertaining to a given 2×2 subtable was calculated by taking the logarithm of the corresponding odds-ratio in the subtable, and that the interaction pertaining to intrinsic status inheritance of U status (in table 1) was obtained as the arithmetic average of the interactions in tables 1E and 1G. Thus, the interaction pertaining to intrinsic status inheritance of U status is equal to the logarithm of the geometric average

[56] In addition to this difference between the new index and the usual one, note also that the new index of immobility for the U status category is larger than for the L status category, but the usual index applied to the Danish data would have suggested the opposite to be the case.

[57] This relative difference is actually equal to the total difference between the observed and "expected" frequencies in the diagonal cells, divided by the total of all the observed frequencies in the cross-classification table. The difference between the observed and "expected" frequencies in the (U,U) cell, divided by the total of all the observed frequencies in the cross-classification table, we shall refer to as an index of status "persistence" of U status; and a similar definition would apply to the M status and the L status. This index is equal to 0.13, -0.10, and 0.08, for the U, M, and L status categories, respectively, in Britain; and 0.23, -0.07, and 0.07, respectively, in Denmark.

[58] See, e.g., Rogoff 1953; Glass 1954; Carlsson 1958; Svalastoga 1959.

of the odds-ratios in tables 1E and 1G.[59] If the model of quasi-perfect mobility (with the diagonal cells blanked out) were to fit the data perfectly, then this geometric average would equal the new index of immobility for U status as given in table 18.[60] A similar remark applies also to the M and L status categories. For the U, M, and L status categories, these geometric averages are 4.45, 0.68, and 3.00, respectively, for the British sample; and 5.42, 0.68, and 3.18, respectively, for the Danish sample. Note how similar these values are to the results obtained with the new index in table 18. (Since the interaction pertaining to intrinsic status inheritance of M status, as defined by formula [14], is the negative of the arithmetic average of the interactions in tables 1B and 1C, this interaction is equal to the logarithm of the geometric average of the reciprocals of the odds-ratios in tables 1B and 1C. Therefore, for the M status category, we actually use the geometric average of the reciprocals, rather than the geometric average itself, to obtain the numerical results presented above.)

From the results presented in tables 7 and 10, we see that all these values (i.e., the geometric averages corresponding to the interactions) differ from 1.00 in statistically significant ways. For the U and L status categories, these values are significantly larger than 1.00, and for the M status category, the values are significantly smaller than 1.00. Furthermore, we see that the values for the U status category are significantly larger than the corresponding values for the L status category, which in turn are significantly larger than the corresponding values for the M status category.

The interaction pertaining to intrinsic net status inheritance of all statuses, which was introduced earlier in this article, was the sum of the interactions pertaining to intrinsic status inheritance of U, M, and L statuses. Thus, this interaction is equal to the logarithm of the product of the three geometric averages referred to in the preceding paragraph. This product is equal to 9.13 and 11.65 for Britain and Denmark, respectively.[61] (Here too, for the M status category, we actually use the geometric average of the reciprocals, rather than the geometric average itself, in our calculations leading to the numerical results presented above.) From the results presented in tables 7 and 10, we see that these values are also significantly different from 1.00.

THE ANALYSIS OF CROSS-CLASSIFICATION TABLES OTHER THAN THE 3 × 3 TABLES

In the earlier sections of this paper, we used the 3 × 3 tables (tables 1 and 8) to illustrate the application of the various techniques of analysis pre-

[59] See also footnote 24.

[60] This relationship between the geometric average and the new index of immobility can be proved by calculating both of these quantities under the assumption that there is quasi-independence (i.e., quasi-perfect mobility), as defined in my article (1968), when the diagonal cells are blanked out.

[61] The calculation of this product leads also to the suggestion that the corresponding product be calculated for the values obtained with the new index of immobility given in

sented there. As we noted earlier, the general approach developed here could be applied more generally to cross-classification tables of any size, either square tables (e.g., 5 × 5 tables) or rectangular tables (e.g., 5 × 7 tables). In the present section, we shall illustrate how some of these techniques can be used with the larger tables.

Let us begin by considering the British and Danish data when five status categories (rather than three) are used. We shall use the same five status categories used earlier by Svalastoga (1959) for the comparison of the

TABLE 19

CROSS-CLASSIFICATION OF BRITISH AND DANISH
MALE SAMPLES ACCORDING TO EACH SUBJECT'S
STATUS CATEGORY AND HIS FATHER'S STATUS
CATEGORY

FATHER'S STATUS	A	B	C	D	E
	British Subject's Status				
A..........	50	45	8	18	8
B..........	28	174	84	154	55
C..........	11	78	110	223	96
D..........	14	150	185	714	447
E..........	0	42	72	320	411
	Danish Subject's Status				
A..........	18	17	16	4	2
B..........	24	105	109	59	21
C..........	23	84	289	217	59
D..........	8	49	175	348	198
E..........	6	8	69	201	246

British and Danish data, and later used by Levine (1967) and Mosteller (1968), but we shall reach somewhat different conclusions from those presented in the earlier work. The data are given in table 19.[62] The status categories A, B, and C in this table formed the U status category in tables 1 and 8; and status categories D and E in this table were the same as M and L, respectively, in the earlier tables.

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table 18 for the U, M, and L status categories. This product would provide us with an index of net immobility.

[62] The entry in the (E,A) cell of the British table is 0 in the original data and here; but it was replaced by 3 in the tables used by Levine and Mosteller. Although there are situations in which a "smoothing" of the original data (or the replacement of a 0 value by, say, $\frac{1}{2}$) might be a reasonable procedure to adopt (see, e.g., Gart and Zweifel 1967; Mosteller 1968), no justification is given for the replacement of a 0 value by 3 in the work by Levine and Mosteller. The mobility patterns in the British and Danish data are actually somewhat less similar when the original data are analyzed than when the 0 value is replaced by 3; but of course, in a study aimed at comparing the mobility patterns in the the two sets of data, this increased similarity would not provide adequate justification for this particular replacement of the 0 value.

Applying to table 19 the same method as used to calculate the expected frequencies given in table 15, we obtain a value of 43.40 for the χ^2 goodness-of-fit statistic (with $4 \times 4 = 16$ degrees of freedom) comparing the observed frequencies in table 19 with the corresponding expected frequencies. Comparing this value (43.40) with the usual percentiles of the χ^2 distribution with 16 degrees of freedom,[63] we reject the null hypothesis that the interactions between subject's status and father's status were the same in the populations represented by the British and Danish samples.[64]

Recall that we found earlier that the χ^2 value, which was obtained when the two 3×3 tables (tables 1 and 8) were analyzed to see if the interactions were the same in the British and Danish studies, could be accounted for, to a rather large extent, by the difference in status inheritance of U status in these countries. Since the U status category has been divided into the three high status categories A, B, and C, in the tables presently under consideration, we shall now examine whether the interactions (between subject's status and father's status) in the British and Danish studies are quasi-homogeneous when the observed status inheritance among the three high status categories A, B, and C, in each country is taken into account.

Applying to table 19 the same method used to calculate the expected frequencies given in table 16, blanking out the nine cells in table 19 that correspond to the (U,U) cell in table 1, we obtain a χ^2 value of 11.69 for the χ^2 goodness-of-fit statistic (with $16 - 9 = 7$ degrees of freedom) comparing the observed frequencies in table 19 with the corresponding expected frequencies.[65] Comparing this value with the value of 43.40, which was obtained in the paragraph before the preceding one, we now see that the differences between the two social mobility tables (with respect to the interactions between subject's status and father's status) can be accounted for, to a rather large extent, by the difference between the tables in the status inheritance among the three high status categories.

The difference between the two χ^2 values (43.40 $-$ 11.69) provides us with a value of 31.71, which can be treated as a χ^2 value (with $16 - 7 = 9$ degrees of freedom) for testing the null hypothesis that the British and Danish populations corresponding to table 19 are the same with respect to all interactions that are affected by the entries in the blanked out cells (i.e., the nine cells pertaining to status inheritance among the A, B, and C status categories), assuming that there is quasi-homogeneity with respect

[63] For example, the 95th percentile is 26.30. A question can be raised concerning the applicability of the usual large-sample χ^2 theory when one of the observed frequencies in the sample is zero; but we shall not pursue this point here.

[64] When considering the substantive meaning of this statistically significant difference, it should be noted that the British study included persons aged eighteen years and over, whereas the Danish study was limited to persons aged twenty-one years and over. For further details pertaining to the comparability of the British and Danish studies, see Svalastoga 1959.

[65] The 95th percentile of the χ^2 distribution with 7 degrees of freedom is 14.07.

to the interactions that are not affected by the entries in the blanked out cells. Comparing this value (31.71) with the usual percentiles of the χ^2 distribution with 9 degrees of freedom, we reject this null hypothesis.[66] By a comparison of the observed and expected frequencies in the test of homogeneity, or by some of the other methods described in the earlier sections, we find that there is, generally speaking, more status inheritance among the status categories A, B, and C in the Danish study than in the British study, except that status inheritance within the status category A is more pronounced in the British study.

As we noted earlier, the 5×5 cross-classification tables considered above differ from the 3×3 tables considered earlier in that the A, B, and C status categories above had been combined to form the U status category earlier.

TABLE 20

CROSS-CLASSIFICATION OF BRITISH MALE SAMPLE
ACCORDING TO EACH SUBJECT'S
STATUS CATEGORY

FATHER'S STATUS	SUBJECT'S STATUS				
	1	2	3	4	5
1...........	297	92	172	37	26
2...........	89	110	223	64	32
3...........	164	185	714	258	189
4...........	25	40	179	143	71
5...........	17	32	141	91	106

Note that the observed frequency in each of the A, B, or C status categories is much less than in the D or E status categories. We shall now consider instead a 5×5 table (table 20) obtained by dividing the U status categories of the 3×3 table into two status categories (rather than three), and by dividing the L status category into two as well.[67] We shall use table 20 to illustrate the application (to tables other than the 3×3 tables) of some of the other techniques presented earlier in this article.

With the finer division into five status categories in table 20, we would expect that "status inheritance," as defined in my article (1965b), might affect not only the number of individuals who are in the same status category as their fathers but also the number of individuals who are in the

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[66] The 95th percentile of the χ^2 distribution with 9 degrees of freedom is 16.92. Even if the χ^2 distribution with 16 degrees of freedom were used, in accordance with an analogous procedure based on one of the methods suggested earlier herein for the analysis of the corresponding Z^2 statistics, the null hypothesis would still be rejected.

[67] The British data are given in sufficient detail (and the sample is large enough) to make possible this particular 5×5 cross-classification. This could not be done with the Danish data. Even for the British data, it was not possible to divide the M status category into two subcategories. The particular 5×5 cross-classification (table 20) was considered earlier in my article (1965b).

status category immediately adjacent to their fathers.[68] Indeed, while the usual χ^2 test of the independence in the 5×5 table yields a χ^2 value of 780.47 (with $4 \times 4 = 16$ degrees of freedom), a χ^2 value of 1.31 is obtained (with $16 - 13 = 3$ degrees of freedom) for testing the null hypothesis of quasi-independence when those individuals who differ from their fathers by at most one status category are blanked out.[69] Comparing the two χ^2 values (780.47 with 1.31), we see that the dependence between subject's status and father's status in table 20 can be accounted for, almost entirely, by status inheritance within status categories and status inheritance among adjacent status categories.

TABLE 21

New Index of Status Immobility for Each Status Category in the British Sample Calculated by Two Different Methods

	New Index	
Status Category	Calculated by Method A*	Calculated by Method B†
1................	14.26	12.00
2................	2.00	2.62
3................	0.53	0.68
4................	3.13	3.15
5................	5.38	4.35

Note.—The cross-classification of the British Sample analyzed in the present table was presented in table 20, in which the five status categories (1, 2, . . . , 5) were used.

* Method A takes into account status inheritance within status categories and status inheritance among adjacent status categories.

† Method B takes into account status inheritance among status categories 1 and 2, status inheritance among status categories 4 and 5, and status inheritance in status category 3.

In view of the fact that table 20 was obtained by a division of the U and L status categories of table 1 into status categories 1 and 2 and status categories 4 and 5, respectively, of table 20, we might also expect that it would only be necessary to take into account status inheritance among status categories 1 and 2, status inheritance among status categories 4 and 5, and status inheritance in status category 3. Indeed, a χ^2 value of 7.86 is obtained (with $16 - 9 = 7$ degrees of freedom) for testing the null hypothesis of quasi-independence when those individuals in the four cells pertain-

[68] For the 5×5 tables in table 19, we would expect that "status inheritance" might affect the nine cell entries referred to earlier (pertaining to status inheritance among the A, B, and C status categories) and the two diagonal cells pertaining to status inheritance in the D status category and in the E status category.

[69] A total of thirteen cells were blanked out here: the five diagonal cells and the eight cells immediately adjacent to the diagonal cells.

ing to status inheritance among the status categories 1 and 2, the four cells pertaining to status inheritance among the status categories 4 and 5, and the diagonal cell pertaining to status inheritance in status category 3, are blanked out. Thus, we see that the data fit the model of quasi-independence quite well even when four of the thirteen cell entries, which were blanked out in the preceding paragraph, are not blanked out.

The numerical values obtained with the methods suggested earlier herein for calculating the new indices of immobility, and the various other measures introduced there, will depend upon which cells of the cross-classification table are blanked out. Thought must be given in each particular case to determining which cells should be blanked out. In the case considered above, the blanking out of the nine cells has the advantage that it blanks out fewer observations, while the blanking out of the thirteen cells has the advantage that it leads to a χ^2 value that is somewhat smaller in relative terms.[70] Table 21 compares the new indices of immobility, obtained by these two methods of blanking out. The results are quite similar. If an inappropriate set of cells had been blanked out in the 5 $\times$ 5 cross-classification (e.g., if only the diagonal cells had been blanked out in table 20), then quite different (and misleading) results would have been obtained.[71]

REFERENCES

Birch, M. W. 1963. "Maximum Likelihood in Three-Way Contingency Tables." *Journal of the Royal Statistical Society*, ser. B, 25:220–33.

Carlsson, G. 1958. *Mobility and Class Structure*. Lund, Sweden: Gleerup.

Duncan, O. D. 1966. "Methodological Issues in the Analysis of Social Mobility." In *Social Structure and Mobility in Economic Development*, edited by N. J. Smelser and S. M. Lipset. Chicago: Aldine.

Edwards, A. W. F. 1963. "The Measure of Association in a 2 $\times$ 2 Table." *Journal of the Royal Statistical Society*, ser. A, 126:109–14.

Fisher, R. A., and F. Yates. 1953. *Statistical Tables for Biological, Agricultural and Medical Research*. 6th ed. New York: Hafner.

Gart, J. J. 1962. "On the Combination of Relative Risks." *Biometrics* 18:601–10; 19:509.

Gart, J. J., and J. R. Zweifel. 1967. "On the Bias of Various Estimators of the Logit and its Variance." *Biometrika* 54:181–7.

Glass, D. V., ed. 1954. *Social Mobility in Britain*. Glencoe, Ill.: Free Press.

Goodman, L. A. 1961a. "Modifications of the Dorn-Stouffer-Tibbitts Method for 'Testing the Significance of Comparisons in Sociological Data.'" *American Journal of Sociology* 66:355–63.

———. 1961b. "Statistical Methods for the Mover-Stayer Model." *Journal of the American Statistical Association* 56:841–68.

———. 1963. "Statistical Methods for the Preliminary Analysis of Transaction Flows." *Econometrica* 31:197–208.

———. 1964a. "A Short Computer Program for the Analysis of Transaction Flows." *Behavioral Science* 9:176–86.

[70] In comparing the observed χ^2 values, the difference in their corresponding degrees of freedom can be taken into account by comparing the corresponding percentiles pertaining to the observed values.

[71] The inappropriateness of blanking out this particular set of cells was pointed out in my article (1965b). A similar point was also made by McFarland (1968).

Goodman, L. A. 1964b. "Simultaneous Confidence Limits for Cross-Product Ratios in Contingency Tables." *Journal of the Royal Statistical Society*, ser. B, 26:86–102.
————. 1964c. "Simple Methods for Analyzing Three-Factor Interactions in Contingency Tables." *Journal of the American Statistical Association* 59:319–52.
————. 1964d. "Interactions in Multidimensional Contingency Tables." *Annals of Mathematical Statistics* 35:632–46.
————. 1964e. "Simultaneous Confidence Intervals for Contrasts among Multinomial Populations." *Annals of Mathematical Statistics* 35:716–25.
————. 1965a. "On Simultaneous Confidence Intervals for Multinomial Proportions." *Technometrics* 7:247–54.
————. 1965b. "On the Statistical Analysis of Mobility Data." *American Journal of Sociology* 70:564–85.
————. 1965c. "On the Multivariate Analysis of Three Dichotomous Variables." *American Journal of Sociology* 71:290–301.
————. 1968. "The Analysis of Cross-Classified Data: Independence, Quasi-Independence, and Interactions in Contingency Tables with or without Missing Entries." *Journal of the American Statistical Association* 63:1091–1131.
Levine, J. H. 1967. "Measurement in the Study of Intergenerational Status Mobility." Ph.D. thesis, Harvard University.
McFarland, D. D. 1968. "An Extension of Conjoint Measurement to Test the Theory of Quasi-Perfect Mobility." Michigan Studies in Mathematical Sociology, Paper no. 3.
Miller, R. G., Jr. 1966. *Simultaneous Statistical Inference*. New York: McGraw-Hill.
Mosteller, F. 1968. "Association and Estimation in Contingency Tables." *Journal of the American Statistical Association* 63:1–28.
Pearson, E. S., and H. O. Hartley. 1954. *Biometrika Tables for Statisticians*. Vol. 1. Cambridge: Cambridge University Press.
Rogoff, N. 1953. *Recent Trends in Occupational Mobility*. Glencoe, Ill.: Free Press.
Selvin, H. C., and A. Stuart. 1966. "Data-Dredging Procedures in Survey Analysis." *The American Statistician* 20:20–23.
Stinchcombe, A. L. 1964. *Rebellion in a High School*. Chicago: Quadrangle Books.
Svalastoga, K. 1959. *Prestige, Class and Mobility*. London: William Heinemann.
White, H. C. 1963. "Cause and Effect in Social Mobility Tables." *Behavioral Science* 7:14–27.

Measuring the Permeability of Occupational Structures: An Information-theoretic Approach[1]

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Methods deriving from information theory are proposed for the analysis of social mobility matrices. They permit us to give quantitative answers to such questions as, "Given a man's social origin, how much uncertainty is there about what his own social position will be?" Other methods would undoubtedly be more appropriate whenever social positions are measured on an interval scale, but the assumptions they require are often implausible. The methods herein are designed for the more usual situation where positions are merely grouped in categories which may not even form an ordinal scale: nominal scale data are treated *as* nominal scale data. These methods are used to re-analyze several intergenerational occupational mobility matrices which appear in the literature and to make comparisons between such matrices.

According to Svalastoga (1965a, p. 70), the "permeability" of a society is the most important single clue to its system of social stratification. In a statement apparently meant as a definition of "permeability" he writes: "A social system is considered more or less permeable depending upon the ease of entrance to and exit from any position in the system" (Svalastoga, 1965a, p. 39). Since we only have data on what people actually do, not what they could have done if they had been so inclined, "ease of entrance . . ." presumably refers to the former, not the latter.

This definition of permeability places it on the uncertainty-predictability dimension. If, in fact, it is easy to enter and leave the positions of the society, the position in which a man ends up will be a matter involving a large amount of uncertainty. On the other hand, if it is hard to enter and leave positions, a man's eventual position will be quite predictable.

Later in the same work, however, Svalastoga gives a different definition of permeability as "the degree to which positions are filled without respect to social origin or other characteristics determined at birth" (p. 70). In the case of occupational structures, with which we are concerned, "social origin" refers to the occupation of the father of the man in question.

This definition, unlike the earlier one, explicitly involves the dependence of one's position on his social origin; there is a subtle difference which should not be overlooked. Consider the hypothetical mobility matrix shown as table 1. Clearly one's origin does not figure in determining his own occupa-

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tion, since the probabilities of each type of occupation are the same for everyone, regardless of origin; thus the society is extremely permeable according to the second definition. However, it is apparently quite difficult to enter any occupation not categorized as working class; thus it seems that this hypothetical society has low permeability according to the first definition.

Nevertheless, this second definition also relates to the dimension of uncertainty-predictability. However, it is not only the *amount* of uncertainty which is relevant here, but also the amount of *reduction* of uncertainty which occurs when one's social origin is learned. If positions are, in fact, filled without respect to social origin, then learning a man's social origin would be no help in predicting his own position. On the other hand, if social origin does figure in the way positions are filled, learning a man's origin

TABLE 1

HYPOTHETICAL MOBILITY MATRIX

	OWN OCCUPATION			
ORIGIN	Upper	Middle	Working	Lower
Upper.......	.02	.03	.90	.05
Middle.......	.02	.03	.90	.05
Working......	.02	.03	.90	.05
Lower........	.02	.03	.90	.05

NOTE.—The (i,j) entry is the conditional probability of having an occupation in category j, given that one's father has an occupation in category i.

should reduce the uncertainty about (i.e., increase the predictability of) his own occupation.

(In a personal communication Svalastoga writes that he meant the first definition to be more general than the interpretation it received above, and that he did not intend to suggest equivalence of the two definitions. "I rather felt that the first definition referring to ease of entry and exit was highly general; thus [it] might include operationalizations referring, e.g., to the relative openness of nations to migrants from abroad, and in general apply to all types of social systems, micro- and macro-. The second concept is, hence, seen as one of many specific interpretations of the first." In this light, the contrast made above is between two specific interpretations of a concept which is more general than either one of them.)

For his empirical work, Svalastoga sticks closely to the second definition, which involves the dependence of social status on social origin, or the predictability of the former from the latter. Since the absolute value of the correlation coefficient is an index of one type of predictability, namely predictability using a linear equation, Svalastoga (1965a, p. 40) concludes that "permeability is inversely related to the absolute value of the correlation

coefficient relating paternal and filial status." In a later paper (1965*b*) he gives approximations of such correlations for nine European countries.[2]

Such a procedure, however, is beset with a number of problems which originate in the very nature of the data to which it is applied. The correlation coefficient is a parameter of the joint distribution of two (numerical) random variables, and only through the use of questionable artifices can it be applied to cross tabulations such as mobility matrices.

In order to calculate approximate values of correlation coefficients, Svalastoga (1965*b*) is forced to assume that occupational status is unidimensional, and to arbitrarily assume the form of the underlying distribution of numerical social status values. For convenience he assumes that the form of the distribution is constant over time, and from country to country.[3] Then, assuming the categories are appropriately ordered from high to low status, he can designate a range of numerical values for each category. But he still has no way of assigning particular numerical values from such a range to particular occupations within the category for which that range of values was designated. Therefore he arbitrarily treats the occupations in a particular category as if each lay at the median of the range of social status values designated for that category. This, in turn, makes the distribution of assigned values deviate considerably from the shape of the distribution assumed; in particular, it changes the standard deviation, a matter Svalastoga seems to have overlooked in his calculations.[4]

Of course, even the assignment of a range of values to a particular category, according to an assumed distribution of social status, requires that

[2] Actually, to our knowledge, Svalastoga never calculates values of $(1 - |r|)$, or any other such quantity inversely related to the absolute value of the correlation coefficient, nor does he state a precise formula for calculating permeability from the correlation, unless perhaps he intended "inversely related to" to mean "the reciprocal of." And in another context, when working with dichotomous data, he measures permeability as the "percent of the total group of manual origin who entered the elite, divided by the percent of the total population classified as elite" (Svalastoga 1965*a*, p. 117).

[3] At several points in his work, Svalastoga (1961; 1964, pp. 547–48; 1965*a*, pp. 12, 61; 1965*b*, p. 175) either assumes that social status is lognormally distributed or gives theoretical arguments of why this should be the case. The lognormal is a highly skewed distribution defined as follows: If log X is normally distributed, then X is lognormally distributed. However, the numbers that he correlates are gotten from tables of the normal distribution. Thus if social status is, in fact, distributed lognormally, the values he calculates are approximations of the correlations between the logarithm of father's status and the logarithm of son's status, rather than the correlations between father's status and son's status. Or stated differently, despite his theoretical arguments to the contrary, for his actual calculations he in effect assumes that social status is normally distributed. This discrepancy only becomes apparent in a mathematical appendix (1965*b*, pp. 181–82).

[4] This was pointed out to me by Otis Dudley Duncan, who recalculated Svalastoga's correlations to make sure he understood the precise procedure used. It is not entirely clear whether the standard deviations of the assumed distributions or the standard deviations of the numbers actually assigned should be used in the denominator of the correlation coefficient. Svalastoga apparently used the former, although it is difficult to be sure, since he rearranged the orders of some categories and collapsed some sets of categories, as mentioned in the text.

the categories have a known rank order by status. But the data do not even have that property, and Svalastoga (1965b, p. 175) rearranges the categories in some cases and collapses sets of categories in others. His criterion for doing so is the so-called principle of social gravitation, which states that the amount of mobility between two categories decreases monotonically with the difference in their respective levels of social status. Thus he rearranges the data to make it fit this theory, which he then takes to signify that the resulting categories are rank ordered by status.

In summary, then, one who accepts Svalastoga's correlations must accept an extremely large set of questionable assumptions along with them. Some devotees of nonparametric statistics would probably turn to one or another of the "distribution-free" substitutes for the correlation coefficient (Goodman and Kruskal, 1954; 1959; 1963) to avoid the powerful assumptions required by Svalastoga's methods. But we will not do that.

The relevant questions are in terms of the predictability-uncertainty dimension: How much uncertainty exists about a person's position when his origin is unknown? And how much is this uncertainty reduced when we learn his origin? Thus the problem is one of measuring uncertainty where the data are in discrete categories. This problem has been solved by Shannon in his work on the theory of communication, more commonly called "information theory." His methods will be presented and discussed in the next section.

Other methods would undoubtedly be more appropriate when social status is measured on an interval scale (Duncan 1961; see also Blau and Duncan 1967, chap. 4).[5] But in the more usual situation, the occupations are merely classified into categories, with there being some question as to whether the categories even form an ordinal scale. It is for the latter type of data that these methods are particularly appropriate: they treat nominal scale data *as* nominal scale data, rather than attempting to convert them into interval scale data at the cost of making strong and questionable assumptions.

MEASURING UNCERTAINTY: SHANNON'S
INFORMATION THEORY

Information theory was developed by Claude E. Shannon[6] in his 1948 papers, which are available in book form (Shannon and Weaver 1949). Our

[5] Even in the case of interval scaling of occupations, however, there may be some problems with using correlation (or regression) methods. For one thing, socioeconomic status is apparently not a single dimension (see Gordon 1958, chap. 7; Kahl and Davis 1955), so that no scale can do more than partly capture it. Second, the manner in which Duncan's (1961) scale is constructed gives it low discriminatory power at certain points on the scale. Third, as currently used in mobility studies, correlation and regression techniques detect only relationships which are linear in the occupational scale used, although these methods could be extended if found necessary.

[6] C. E. Shannon's information, used in this paper, is not to be confused with R. A. Fisher's information, used in the Cramer-Rao theorem of statistical estimation. (For the latter, see Rao 1965, pp. 268–71.)

formulation in this section largely follows that of Khinchin's papers, which are also available in book form (Khinchin 1957). Several textbooks on information theory are available (Ash 1965; Fano 1961; Goldman 1953). Other relevant books are Garner (1962) and Theil (1967), wherein information theory methods are applied to certain problems in psychology and economics, respectively.

We begin with a situation A, having K possible outcomes, denoted $1, 2, \ldots, K$, with probabilities $p_1, \ldots, p_K$, respectively, and define

$$H(A) = -\sum_{i=1}^{K} p_i \log p_i .$$ (1)

If some p^1 is zero, the corresponding term is undefined $(0 \times -\infty)$, so we use the convention of defining $0 \log 0$ as the limit, as p approaches 0 from above, of $p \log p$; this limit turns out to be 0. The base of logarithms is arbitrary, as will be shown below, so as a matter of convenience we use base 10 throughout.[7] The quantity H is variously called *information, entropy,* or simply *uncertainty.*[8]

The justification for defining uncertainty, and hence permeability, in this manner depends on the mathematical properties of the function H. First of all, H is either zero or positive, since each probability, being unity or less, has a zero or negative logarithm, and the negative sign in front changes each term to nonnegative. Also, H is zero in the case that some probability is 1 and all others are zero, the case where uncertainty is certainly minimum. More crucial, as we will see below, are the following properties:

1. The quantity H is maximum in the situation where the possible outcomes are equally likely, with probability $1/K$ each. The proof of this follows from the convexity of the function $p \log p$, sketched in figure 1. (Actually, we have plotted $-p \log p$, its reflection across the p axis.) If we denote $-p \log p$ by $f(p)$, then convexity means simply that for any set of different p values, whose average is denoted avg p, then $f(\text{avg } p) \geq \text{avg } f(p)$. An

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[7] The reader will recall that the logarithm of a number is the power to which the base must be raised to yield that number. Thus $\log_2 (\frac{1}{8})$, the logarithm of $\frac{1}{8}$ to base 2, is -3, since $2^{-3} = 1/(2^3) = \frac{1}{8}$. Base 2 logarithms are used consistently in the area of communication in order to make the unit of information, called a "bit" (*binary digit*), equal to the amount for the simplest possible signal generating device, one with only two possible states each having probability $\frac{1}{2}$. There is no comparable reason for using base 2 logarithms in mobility research, and good reason not to do so: tables of base 2 logarithms are rare, while tables of common logarithms (base 10) and natural logarithms (base $e = 2.78$ approx.) are readily available. Base 10 logarithms also have the property that $\log (10^n p) = n + \log p$, which makes them somewhat more convenient than natural logarithms.

[8] The use of the term "information" for a quantity that measures uncertainty may seem confusing and deserves some explanation. The amount of information gained, in learning the outcome, is the amount by which the prior uncertainty is reduced. But learning the outcome reduces the uncertainty to zero, making the amount of information gained equal to the amount of prior uncertainty. Thus the same quantity measures both the uncertainty existing before the outcome is known and the information gained in learning the outcome.

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example for two p values is shown in figure 1. A few rough calculations, remembering that the probabilities in any situation must sum to one, will convince the reader that this is always true. A proof is given in Khinchin (1957, p. 4). Once again H agrees with the intuitive notion of uncertainty, taking its largest value where each outcome has the same probability, where there is no basis for predicting any one outcome over the rest.

This maximum possible value of H can be calculated, and depends only on K, the number of possible outcomes. If each of the K probabilities is $1/K$, then $H = -K(1/K) \log (1/K) = -\log (1/K) = \log K$. In our case, K is the number of occupational categories.
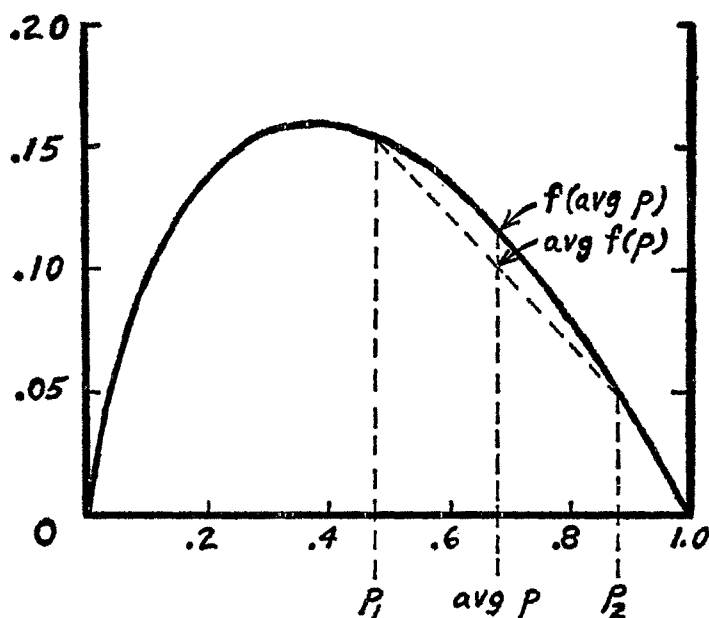
Fig. 1.—Graph of $f(p) = -p \log p$, using base 10 logarithms, with an illustration of the convexity of $(p \log p)$.

2. Writing down a $(K + 1)$st possible outcome which is fictitious, in the sense of having zero probability of occurring, would not make one feel any more or less certain about the actual outcome. Nor would the listing of such a fictitious occupational category in our case change the value of H, since the term added to the summation would be $-0 \log 0 = 0$.

One could also consider other aspects of a man besides his occupation; for example, his education, intelligence, ethnic background, or father's occupation. If one of these is conceived of as forming discrete categories (or arbitrarily partitioned into discrete categories) with known probabilities, this would lead to a matrix of joint probabilities of occupation and the other characteristic. Of course this would also give rise to two marginal distributions of probabilities for occupation and the other characteristic,

respectively, and two sets of conditional distributions: for occupation, given the other characteristic, and for the other characteristic, given occupation. We might want to determine the amount of uncertainty involved in any one of these distributions, whether joint, marginal, or conditional.

The measurement of uncertainty, as outlined above, is easily extended to the uncertainty of joint events. Consider a sequence of two situations, A and B, A having K possible outcomes, generically indexed by i, B having L possible outcomes, generically indexed by j, and denote the probability of joint occurrence by p_{ij}. Then there are KL different possible joint outcomes, so the uncertainty of the joint outcomes, from formula (1), is

$$H(AB) = -\sum_{i=1}^{K} \sum_{j=1}^{L} p_{ij} \log p_{ij}. \tag{2}$$

This is identical in form with formula (1), except that joint probabilities, being doubly indexed, require a double summation.

Let $p_{j/i}$ denote the conditional probability of outcome j in the second situation, given that outcome i occurs in the first; and let $p_{i\cdot}$ and $p_{\cdot j}$ denote the respective marginal probabilities. By the definition of conditional probability, we have $p_{ij} = p_{i\cdot}.p_{j/i}$, and thus $\log p_{ij} = \log p_{i\cdot} + \log p_{j/i}$; substituting these into formula (2) gives

$$H(AB) = -\Sigma\Sigma p_{i\cdot}.p_{j/i}(\log p_{i\cdot} + \log p_{j/i})$$

$$= -\sum_{i=1}^{K} p_{i\cdot} \log p_{i\cdot} + \sum_{i=1}^{K} p_{i\cdot}\left[-\sum_{j=1}^{L} p_{j/i} \log p_{j/i}\right]. \tag{3}$$

The quantity in square brackets in formula (3) is identical with formula (1), except that it involves conditional, rather than marginal probabilities. Thus we are led to define conditional uncertainty:

$$H(B/A = i) = -\sum_{j=1}^{L} p_{j/i} \log p_{j/i}. \tag{4}$$

Using this definition, formula (3) reduces to

$$H(AB) = H(A) + E\,H(B/A), \tag{5}$$

where E is the expectation operator, denoting a weighted average. This is a third property of H that we wish to consider:

3. In words, formula (5) states that the uncertainty about the joint outcome of situations A and B equals the amount of uncertainty about the outcome of A plus the average amount of uncertainty which would still remain about the outcome of B if the the outcome of A were known.

In the case of B being occupation and A being some other characteristic, this reads: The joint uncertainty about a man's occupation and the other characteristic equals the amount of uncertainty about the other character-

istic plus the average amount of uncertainty which would still remain about his occupation if the other characteristic were known.[9]

In measuring uncertainty, the use of a quantity which involves logarithms may seem unnatural or unnecessary. But we have shown that H, as defined in formula (1), has several properties which agree with what one would intuitively mean by "uncertainty." Now, to complete the justification of the use of H to measure uncertainty, we use the uniqueness theorem which states that H is the only function satisfying three of these properties, in the sense that only the unit of measurement is arbitrary: H measures uncertainty on a ratio scale. The theorem is as follows:

Theorem (uniqueness): Let U be a continuous[10] function defined for any number of possible outcomes, and any set of probabilities. If U satisfies properties 1, 2, and 3, then $U = cH$, where c is a positive constant.

The proof, though not difficult, is several pages long, and will not be presented here. It is given in Khinchin (1957, pp. 9–13). Shannon used a slightly different set of requirements for a function to measure uncertainty, arriving at the same result—that H is unique up to a positive multiplicative scale factor (Shannon and Weaver 1949, pp. 48–50, 116–18).

We promised earlier to show that the base of the logarithms in formula (1) is arbitrary. Once we have the uniqueness theorem, this fact follows easily from the change of base theorem for logarithms: For any two bases, a and b, and any number N, $(\log_a N) = (\log_b N)(\log_a b)$. Thus calculating H using logarithms to base a is equivalent to calculating it using logarithms to base b, and multiplying the result by $\log_a b$, which may be included in the scale factor c of the uniqueness theorem.

PARTITIONING THE UNCERTAINTY
IN A MOBILITY MATRIX

In this section we partition the joint uncertainty about a man's origin and destination into two components: uncertainty about his social origin and average uncertainty about his own occupation once his origin is known. Our interest is in the latter component, which is an average of conditional uncertainties, given various origins. A comparison of these various conditional uncertainties may be enlightening. Inequalities are derived, giving bounds within which the various components of uncertainty must lie (one such bound relates this work to previous work using the concept of "perfect mobility").

Consider a matrix P, with entries p_{ij}, the joint probability of origin occu-

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[9] On the other hand, if conditioning were done on occupation rather than the other characteristic, equation (5) would read: The joint uncertainty about occupation and the other characteristic is the amount of uncertainty about occupation plus the average amount of uncertainty about the other characteristic which would still remain if occupation were known. Equation (5) is valid regardless of which way the conditioning is done.

[10] Continuity is required only in case some probabilities are irrational numbers. This need not concern us here.

pational category, i, and destination occupational category, j.[11] Equation (5) permits us to partition the joint uncertainty as follows:

$$H(AB) = H(A) + E\ H(B/A)\,, \tag{6}$$

where $H(A)$ is the uncertainty about a person's category of origin (taken to be his father's occupational category at some specified time; e.g., when the respondent was sixteen, or when the father was thirty, or in some specific year) and $E\ H(B/A)$ is the average amount of uncertainty about a person's destination category (current occupation) when his category of origin is known.

TABLE 2

ESTIMATES OF CONDITIONAL PROBABILITIES OF RESPONDENT'S OCCUPATIONAL
CATEGORY ("DESTINATION"), GIVEN HIS FATHER'S
OCCUPATIONAL CATEGORY ("ORIGIN")*

| | DESTINATION | | | | | | | |
ORIGIN	1	2	3	4	5	6	7	TOTAL
1......	*.388*	.147	.202	.062	.140	.047	.015	1.000
2......	.107	*.267*	.227	.120	.207	.053	.020	1.000
3......	.035	.101	*.188*	.191	.357	.067	.061	1.000
4......	.021	.039	.112	*.212*	.430	.124	.062	1.000
5......	.009	.024	.075	.123	*.473*	.171	.125	1.000
6......	.000	.013	.041	.087	.391	*.312*	.155	1.000
7......	.000	.008	.036	.083	.364	.235	*.274*	1.000

NOTE.—Numbers in this and following tables are rounded from computer output where calculations were done to several more decimal places; totals shown were rounded independently, so they may differ slightly from totals calculated from the rounded figures in the tables.

* From British mobility study (Glass and Hall, 1954).

The first term, $H(A)$, describes the uncertainty of the occupations of the previous generation (but with highly unequal weighting)[12] and is not of direct concern to us here. The second term is the one of interest to us. It consists of a weighted average of the various conditional uncertainties, $H(B/A = i)$, when origin category, i, is known. One matter of interest is to observe how $H(B/A = i)$ varies as a function of $i;$ the extent to which conditional uncertainty about destination is greater for some categories of origin than for others.

Table 2 gives conditional probabilities (or rather sample estimates

[11] We use the neutral term "category" to avoid some of the connotations and ambiguities of the more common term, "class" (see Svalastoga 1965a, pp. 53–56; Gordon 1958, p. 6; Pfautz and Duncan 1950; Cooley 1909, p. 209). We make no assumptions about "class consciousness," nor about the amount of interaction (if any) among members of a given occupational category. And, in particular, although the occupational categories may be ranked by prestige, the methods used do not require it.

[12] The weights are proportional to the number of sons in the current labor force, so that those with no sons do not enter at all, those with two sons receive double weight, etc. Also, $H(A)$ does not describe a cohort of a generation ago, but rather a group of men

thereof) from the Glass and Hall (1954) study of social mobility in England. Table 3 gives the uncertainty transformation $(-p \log p)$ of these conditional probabilities, so that the sum of the entries in row i of table 3 is $-\Sigma_j p_{j/i} \log p_{j/i} = H(B/A = i)$, the conditional uncertainty about destination occupational category, given that origin category was i.

Thus far the numbers $i = 1, 2, 3, 4, 5, 6, 7$, denoting occupational categories, have in no way affected the calculation of uncertainty, either through their magnitudes or through their ranks. They merely provided a convenient index of summation, and addition is commutative—the sum of a set of numbers is unaffected by the order in which they are added. However, in the Glass and Hall data these numbers *are* meaningful: they rank the occupational categories more or less by socioeconomic status, from highest (1) to lowest (7). Notice in table 3 that the conditional uncertainty

TABLE 3

UNCERTAINTY TRANSFORMATION $(-p \log p)$ OF THE CONDITIONAL PROBA-
BILITIES IN TABLE 2, AND THE CONDITIONAL UNCERTAINTY ABOUT
DESTINATION, GIVEN EACH OF THE POSSIBLE ORIGINS

ORIGIN (i)	DESTINATION							TOTAL $[H(B/A=i)]$
	1	2	3	4	5	6	7	
1...........	.16	.12	.14	.07	.12	.06	.03	.71
2...........	.10	.15	.15	.11	.14	.07	.03	.76
3...........	.05	.10	.14	.14	.16	.08	.07	.74
4...........	.04	.05	.11	.14	.16	.11	.07	.68
5...........	.02	.04	.08	.11	.15	.13	.11	.65
6...........	.00	.02	.06	.09	.16	.16	.13	.62
7...........	.00	.02	.05	.09	.16	.15	.15	.62

is greatest (.76) for those originating in the second highest SES category, and decreases to .62 for those originating in the lowest SES category.

The highest occupational category is an exception to this otherwise regular decrease in conditional uncertainty with decrease in socioeconomic status. This category is composed of professionals and high administrators (Glass and Hall, 1954). Table 2 shows the source of this exception: Professionals and high administrators have an exceptionally large amount of occupational inheritance $(p_{1/1} = .388)$. We conclude that, except for the highest category which is relatively more successful in passing on its status, the English occupational structure was more permeable for those whose origins were higher—precisely those who might prefer less permeability.

This, incidentally, is something we would not have learned using correla-

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drawn from several cohorts. In fact, if both a man and his son are working their family will be represented four times, covering three generations: the son, the father twice (once as a repondent and once as the father of a respondent), and the grandfather (as the father of the father, who is a respondent). For further discussion see Duncan (1966, pp. 54–63).

tion or regression techniques. The closest we could come, using the various linear models, would be to estimate the correlation or regression coefficients, for son's occupation on father's occupation, in each of a number of broad occupational categories (for fathers). To our knowledge, this has never been done. Blau and Duncan (1967, pp. 147–52) use a technique based on the analysis of covariance model, but the categories they use are from a different variable rather than from father's occupation.

Table 4 gives some further results. The marginal uncertainty about occupations of fathers of respondents is $H(A) = .71$, only differing slightly from the marginal uncertainty for the respondents themselves, $H(B) = .72$. However, if any interpretation is to be made of this, we should recall that the fathers of respondents do not properly represent a cohort of a generation ago. (The reader may wish to review footnote 11.) For this reason it is

TABLE 4

CALCULATIONS FOR MARGINAL UNCERTAINTY ABOUT ORIGIN, MARGINAL UNCERTAINTY ABOUT DESTINATION, AND AVERAGE CONDITIONAL UNCERTAINTY, FOR BRITISH MOBILITY DATA

CATEGORY (i or j)	ORIGIN			DESTINATION		
	$p_{i\cdot}$	$-p_{i\cdot} \log p_{i\cdot}$		$p_{\cdot j}$	$-p_{\cdot j} \log p_{\cdot j}$	$p_{i\cdot} H(B/A = i)$
1.......	.037	.05		.029	.05	.03
2.......	.043	.06		.045	.06	.03
3.......	.099	.10		.094	.10	.07
4.......	.148	.12		.131	.12	.10
5.......	.432	.16		.409	.16	.28
6.......	.131	.12		.170	.13	.08
7.......	.111	.11		.121	.11	.07
Total.	1.000	.71 [H(A)]		1.000	.72 [H(B)]	.66 [E H(B/A)]

better to think of the origin distribution as the distribution of social origins of the respondents, rather than thinking of it as the distribution of social statuses of the preceding generation. Using this interpretation, the marginal uncertainty about current social statuses of the respondents is practically identical with the marginal uncertainty about their social origins; but with the data given above we are unable to compare their uncertainty with that of a representative sample of workers from a generation ago.

Learning the occupation of one's father reduces the uncertainty about his own occupation, on the average, from $H(B) = .72$ to $E H(B/A) = .66$, an average reduction of .06. However, for some origin categories it is reduced even more (to .62 if his father is in category 7) and for other origin categories the uncertainty actually increases on learning the father's occupation (to .76 if the father is in category 2).

Is .76 a large amount of conditional uncertainty, or relatively little? To answer questions of this type we need to derive further properties of H.

The marginal probability for destination category j, $p_{.j} = \Sigma_i p_{j/i} p_{i.}$, is a weighted average of the conditional destination probabilities, $p_{j/i}$, using the marginal origin probabilities, $p_{i.}$, as weights. Thus, again denoting $-p \log p$ by $f(p)$, we have $f(p_{.j}) = f(\Sigma_i p_{j/i} p_{i.}) \geq \Sigma_i p_{i.} f(p_{j/i})$ by the convexity of $p \log p$. Summing this inequality over j, we get the result

$$H(B) \geq E\ H(B/A) . \tag{7}$$

In words: on the average, learning the outcome of A can only decrease the uncertainty about the outcome of B. (This property was not needed in proving the uniqueness of H, but once again H agrees with the intuitive concept of uncertainty.) Note that this does *not* say anything about particular cases; only the average. We already observed cases where learning the father's occupational category actually increases the amount of uncertainty about the son's occupational category.

We already know that $H(B) \leq \log K$, where K is the number of occupational categories. Combining this with inequality (7) we have

$$E\ H(B/A) \leq H(B) \leq \log K . \tag{8}$$

For conditional uncertainty we have the inequality

$$H(B/A = i) \leq \log K , \tag{9}$$

which is true for any H, whether conditional or not.

The conditional uncertainty has little further restriction. The reason is that, for a category in which few men originate (i.e., $p_{i.}$ small), the conditional probabilities, $p_{j/i}$, can be practically anything without exceeding the destination marginal restrictions, $0 \leq p_{ij} \leq p_{.j}$, which (recalling that $p_{ij} = p_{i.} p_{j/i}$) is equivalent to $0 \leq p_{j/i} \leq p_{.j}/p_{i.}$. The quantity on the right may be quite large (possible over 1.0) if the $p_{i.}$ in the denominator is sufficiently small.[13]

Pursuing another line of reasoning, it is a short step from inequality (8) to relate this approach to previous work (Glass 1954; Rogoff 1953; also see Goodman 1965) which uses the concept of perfect mobility—stochastic independence between occupations of father and son. In the process we will show as well that the average conditional uncertainty, $E\ H(B/A)$, does relate to the father-son correlation in approximately the manner described by Svalastoga (assuming a numerical SES scale is available to be correlated).

From inequality (8) we have that $E\ H(B/A)$ is never greater than $H(B)$. But in the case of perfect mobility, we have stochastic independence, so that $p_{j/i} = p_{.j}$. Thus from equation (4), in the case of independence $H(B/A = i) = H(B)$ for each i. Then multiplying both sides by $p_{i.}$ and summing over i, we get

$$E\ H(B/A) = H(B) \quad \text{(under independence)} . \tag{10}$$

[13] Of course the $p_{j/i}$, being probabilities, have the restrictions of being between 0 and 1, and summing to 1 (when summed over j). But this places no further restriction on the conditional uncertainty, $H(B/A = i)$.

In words: the average conditional uncertainty takes on its maximum possible value when father and son are stochastically independent—in which case the father-son correlation is zero. On the other hand, we already know that when the correlation is 1 or -1 the average conditional uncertainty is 0. This corresponds approximately to the statement quoted earlier: "Permeability is inversely related to the absolute value of the correlation coefficient relating paternal and filial status" (Svalastoga 1965a, p. 40). The difference is that the correlation may be zero without statistical independence, in which case there is still some predictability. Correlation detects only linear relationships, while the method used here detects other deviations from stochastic independence as well.

In table 4 we saw the marginal uncertainty $H(B) = .72$, while the average conditional uncertainty, when father's occupational category is known, was $E\ H(B/A) = .66$, an amount .06 less than it would be in the case of perfect mobility with the same fixed marginal distribution of sons. Of course, from inequality (8) it could never be greater than under independence, while subject to the fixed marginal distribution. However, it could be as high as $\log 7 = .845$ if the marginal distribution of sons were free to vary.

CATEGORY BOUNDARIES AND RELATED MATTERS

Thus far we have taken the occupational categories to be fixed and given. The time has come to face the question squarely: In some cases the categories may be at the option of the investigator, and furthermore, the amount of uncertainty measured will depend on the way in which the categories are constructed.

First, the possible values of the uncertainty depend on the number of categories, since it is always between 0 and $\log K$, inclusive, and could conceivably take on any value in this range. This problem is minor, however. We could simply divide by $\log K$ (including $1/\log K$ in the arbitrary scale factor), getting an index that will vary between 0 and 1 as long as the number of categories used, K, is always the same.

Much more serious is the fact that the value depends on where the category boundaries are drawn. Of course, in this respect, any other technique (including correlation and regression) faces the same or a similar problem. In this section we will investigate the seriousness of the problem.

Suppose that we were to subdivide a single category into two categories (assuming we had the necessary data for such a finer classification), creating $K + 1$ occupational categories from the former K categories. For concreteness, suppose the category is divided in such a manner that the probability, p, of the original category is divided into the two probabilities, ap and $(1 - a)p$. Then the uncertainty contributed by all other categories would be unchanged, while the term $-p \log p$ would be replaced by the two terms $-ap \log (ap) - (1 - a)p \log (p - ap)$. This can be rewritten as $-p \log p + p\ [-a \log a - (1 - a) \log (1 - a)]$, by expanding and collecting terms. Thus, if H is the uncertainty of the original scheme with K cate-

gories, and H' is the uncertainty of the new scheme with $K + 1$ categories,

$$H' = H + p[-a \log a - (1 - a) \log (1 - a)] . \qquad (11)$$

The two terms in square brackets are simply the uncertainty transformations of the proportions into which the original category was split, a and $(1 - a)$. Hence they can be evaluated using the same computational procedure. The bracketed quantity is evaluated, for certain values of a, in table 5. Dividing a category into two equal categories will increase H by 30 percent of the original probability of that category; dividing it unequally

TABLE 5

EFFECT ON H OF DIVIDING ONE OF THE CATE-
GORIES INTO PROPORTIONS a AND $(1 - a)$
FOR SELECTED VALUES OF a

a	$-a \log a$	$-(1-a) \log (1-a)$	Sum
.5	.15	.15	.30
.4	.16	.13	.29
.3	.16	.11	.27
.2	.14	.08	.22
.1	.10	.04	.14

NOTE.—Column headed "Sum" gives the value of the quantity in square brackets in equation (11).

TABLE 6

EFFECT ON THE MAXIMUM POSSIBLE VALUE OF H, OF EXPANDING K
CATEGORIES INTO $(K + 1)$ CATEGORIES, FOR
SELECTED VALUES OF K

K	$(K+1)/K$	$[\log (K+1)/K]$	$\log K$	Proportional Increase
5.........	1.2	.0792	.6990	.115
10.........	1.1	.0414	1.0000	.041
50.........	1.05	.0212	1.6990	.013
100.........	1.01	.0043	2.0000	.002

will give a smaller increase in H. Thus from equation (11) and table 5, if the original category is small (p small) dividing it further will have little effect on H. But subdividing a category which is originally large may have a substantial effect.

Creating an additional category, however, also increases the maximum possible value of H from $\log K$ to $\log (K + 1)$, an increase of $\log [(K + 1)/K]$. The proportional amount of increase, for certain value of K, is given in table 6. The conclusion seems to be that, if the categorization is relatively fine, the exact category boundaries are not too important, but that with only a few categories the exact location of category boundaries may make a sizable difference in the value of H.

COMPARING MOBILITY MATRICES

The problems with Svalastoga's correlation coefficients were discussed above in some detail. Now we have occasion to point out one positive aspect of his approach: Correlation methods are widely known and widely used, so every quantitatively oriented social scientist knows that $r = .4$ means a fairly healthy relationship, but far from perfect dependence. On the other hand, since information theory methods are not widely known among sociologists, it is much less meaningful to report that $E\ H(B/A) = .66$; it would probably be more meaningful if we could say that the average conditional uncertainty is greater (or less) in England than in the United States, or that the average conditional uncertainty has increased (or decreased) in the United States during recent decades. Thus we get into the problem of making comparisons. There are at least three distinct types of comparisons one might wish to make:

1. Comparison of mobility matrices for a given society at two points in time. This problem has generated considerable interest, and a sizable literature (see Duncan 1965, and earlier references cited there). The particular question on which much of the discussion has focused is whether the American stratification structure is becoming more rigid.

2. Comparison of mobility matrices for two subgroups of a given society at the same point in time. Obvious candidates for such a comparison would be mobility matrices for American Negroes and American whites (Duncan 1968), which should be of considerable interest with the current focus on related problems.

3. Comparison of mobility matrices for two different societies. This problem, as well, has generated considerable interest and a sizable literature. This type of comparison is considerably more problematic than the other two, and will be discussed more thoroughly below.

In making comparisons, a crucial consideration is what is to be compared with what. There seem to be several conflicting opinions. Svalastoga's criterion seems to be that persons with the same social status should be compared, whether or not they are employed in similar kinds of occupations. In contrast, Duncan (1966) paired occupations in two different countries on the basis of similar job titles. Furthermore, some authors (Svalastoga 1965b; Levine 1967; Mosteller 1968) would require that the marginal distributions be standardized somehow in order to effect comparability, although they disagree on the precise manipulation of the marginals required to do so.

There is good evidence (Hodge, Siegel, and Rossi 1966) that the prestige of occupations in the United States is relatively constant over time, so that the first two criteria (same social status versus same type of work) do not conflict to any great extent in comparisons made over time in the United States. Thus the methods described above could be applied to such comparisons, with each category consisting of the same occupations at both points in time. And most authorities (all but those who worry about un-

equal marginals) would agree that two mobility matrices constructed in this manner are, in fact, comparable.

In comparisons between two subgroups of the same society, such as U.S. Negroes and U.S. whites, the problems again appear to be minimal. It seems clear that the proper person with whom to compare a Negro doctor is a white doctor; the proper person with whom to compare a Negro clerk is a white clerk, etc. Thus these methods could be applied to such comparisons, with the same occupational categories used for both subgroups.

The situation for international comparisons is not so clearcut. It is not nearly so apparent that a *Technische Angestellte*, say, in Geiger's (1951) study of Denmark, either does the same kind of work or occupies the same rank in his country's social structure that a "skilled worker" does in the United States (cf. Duncan 1966, p. 79). Translation of job titles, like other words, can introduce unintended changes in meaning (Marsh 1967, pp. 271–80). And international comparisons of prestige of occupations do not yield correlations as high as those between various times in the United States (Hodge, Treiman, and Rossi 1966; for an earlier study see Inkeles and Rossi 1956). Thus both those who would pair occupations by type of work done and those who would pair them by prestige have some cause for caution in making international comparisons. And those who require some type of standardization of the marginals have their own problems as well.

As mentioned above, the problem of international comparisons has generated a fair amount of controversy in the literature. American folklore (see Barber 1957, p. 469) has held that the United States is the land of opportunity, and Europe is not. Lipset and Bendix (1959), however, conclude that no such difference exists—that the mobility matrices for various industrial countries are quite similar. Several authors disagree. Matras (1960, p. 166), assuming social mobility to be a Markov chain, noted that there are important differences in the implied stable distributions for different countries. Miller (1960) also found differences. Duncan (1966, pp. 54–63; 77–83) rejected Matras's Markov chain assumption as fallacious, but reached similar conclusions by other methods. But Svalastoga (1965b), using a different criterion of comparability, concluded that the correlation between father's occupation and son's occupation is nearly invariant from country to country. And Levine (1967; or see Mosteller 1968), after manipulating marginals quite differently than Svalastoga had done, reached the same conclusion.

With appropriate misgivings about entering such a murky area, we too will make some comparisons. Table 7 shows the results of an uncertainty analysis for U.S. data, along with the British results already discussed. The occupational categories for the United States are ranked by prestige; more precisely, they are formed from intervals on the Duncan (1961) socio-economic index. It is interesting to observe a repetition of a pattern observed earlier in the British data: low conditional uncertainty for those originating in the very highest category; but otherwise the higher the prestige, the higher the uncertainty. This pattern is not universal, however;

analysis of data from Italy (Lopreato 1965) and Yugoslavia (Milic 1965) reveals no such pattern.

It would be nice to be able to say that the American society is more (or less) open than the British; in fact, table 7 shows that on the average there is more uncertainty about where an American will end up, given his father's occupational category, than the corresponding uncertainty for a British respondent (.7077 for United States; .6635 for British). But such a state-

TABLE 7

ANALYSIS OF THE UNCERTAINTY IN A MO-
BILITY MATRIX FOR THE U.S., SHOWN
WITH CORRESPONDING RESULTS FROM
THE BRITISH MOBILITY STUDY DISCUSSED
EARLIER

Uncertainty Component	England	U.S.A.
Conditional:		
1...............	.7065	.7782
2...............	.7567	.8118
3...............	.7376	.7566
4...............	.6839	.7590
5...............	.6518	.7206
6...............	.6173	.6845
7...............	.6197	.6787
Average........	.6635	.7077
Marginal:		
Origin...........	.7125	.6440
Destination.......	.7192	.7450
Average reduction when origin is learned..........	.0557	.0373

NOTE.—Source for U.S.: unpublished table from the study "Occupational Change in a Generation," kindly provided by Otis Dudley Duncan. The categories used were formed from intervals on the Duncan SES index, rather than by grouping similar occupations as had been done in the mobility tables published from the same study in Blau and Duncan 1967.

ment would not be correct unless qualified by the assumption that the categories used in the two studies were comparable. And that assumption is questionable. The British categories are by occupational types: professional and high administrative, managerial and executive, etc. The American categories, in contrast, are formed from intervals on the Duncan socioeconomic scale, on which categories by occupational type overlap considerably (Blau and Duncan 1967, pp. 121–24). Thus it is questionable whether the categories used in the two studies are, in fact, comparable.

One could attempt to achieve comparability by taking the seventeen-category mobility table from the same study (Blau and Duncan 1967), and

collapsing it into a seven-category table, equating, insofar as possible, the occupations included in each category with the occupations included in the corresponding British category. Of course, in doing so, one would lose the ranking by socioeconomic status and end up with a table that, like the British table, is only approximately ranked by status. Rather than doing so, however, we will turn to another set of mobility tables, in which comparable categories have been constructed already.

Lipset and Bendix (1959, p. 31) presented data from the Rogoff (1953) study in Indianapolis and Geiger's (1951) study in Aarhus, Denmark, each collapsed into a 4 × 4 mobility table. On the basis of visual inspection of these tables, they wrote, "It is clear that there is no substantial difference in the patterns of social mobility in Aarhus and Indianapolis" (Lipset and Bendix 1959, p. 31).

Duncan criticized their method, though he did not address their general conclusion that "the overall pattern of social mobility appears to be much the same in the industrial societies of various Western countries" (Lipset and Bendix 1959, p. 13).

Duncan's (1966, pp. 77–83) criticisms were basically the following: (a) The two tables are not comparable because of age differences in the samples, since Geiger's data came from a local census while Rogoff's data came from marriage licenses, hence predominantly from young men; (b) Even if that problem were overcome, 4 × 4 tables are not sufficiently detailed to display real differences which might exist; and (c) Lipset and Bendix had excluded Negroes from their Indianapolis table.

Duncan then proceeded to construct two mobility tables which would be more comparable (Duncan 1966, table 8). He took only the younger men from Geiger's data; constructed seven occupational categories for each city, placing similar occupational titles in the same category for the two cities (the job titles for Aarhus were in German); and included the Negro data in the Indianapolis table.

One might still question the comparability of the two mobility tables. For example, it might be argued that those who marry are more (or less) mobile than a representative sample; or that some of Duncan's equations of occupational titles were inappropriate; or that these equations should have been made on the basis of occupational prestige in the respective countries, rather than on the type of work done; or that the marginals should have been standardized in some way or other, etc. However, we will not do so, feeling that no comparison of this nature is completely immune to criticism. Rather, we will tentatively accept the assumption of comparability and proceed to compare the resulting mobility tables in terms of the amounts of uncertainty involved in their respective occupational structures.

The results of this comparison are shown in table 8. The various conditional uncertainties show some interesting results, even though the average conditional uncertainties are nearly identical. For those originating in categories 1 through 4, the white-collar occupations, the conditional uncertainties differ little in the two cities. But for those of skilled-worker origin, from category 5, Indianapolis has had more uncertainty, a difference of

.6534 − .6086 = .0448. This is an important difference, since this origin category accounts for about one-fourth of the respondents in each city. But for those originating in category 6, semi- and unskilled workers, and category 7, farmers, Aarhus involves more uncertainty, the differences being .6032 − .5282 = .0750 and .7511 − .6401 = .1110, respectively. Again, these categories are substantial, the former accounting for the origin of about 30 percent of the men in each city and the latter accounting for 10 percent–16 percent.

TABLE 8

ANALYSIS OF THE UNCERTAINTY IN MO-
BILITY MATRICES FOR INDIANAPOLIS* AND
AARHUS, DENMARK† AS MODIFIED‡ TO
MAKE THE TWO STUDIES COMPARABLE

Uncertainty Component	Indianapolis	Aarhus
Conditional:		
1..................	.7324	.7519
2..................	.7702	.7434
3..................	.7477	.7515
4..................	.7503	.7381
5..................	.6534	.6086
6..................	.5282	.6032
7..................	.6401	.7511
Average........	.6416	.6660
Marginal:		
Origin............	.7479	.7016
Destination.......	.6833	.7015
Average reduction when origin is learned..........	.0417	.0355

* Rogoff 1953. † Geiger 1951. ‡ Duncan 1966.

At this point we might stop to emphasize just what is being measured here. To someone whose father had a low status occupation, uncertainty about his own occupation means the possibility of being able to escape his background. And when someone originating in a low status occupation does escape his background, that usually means an increase in status from that of his father. Conversely, uncertainty about the destination of a man originating in a high status occupation usually means the undesirable (to him, at least) possibility of losing his birthright, and dropping to a lower status.

Here we found no substantial difference between Indianapolis and Aarhus for those originating in the high status occupations. But in the case of persons originating in the lower status occupations, there are differences worth noting, and which, incidentally, would be missed in the type of analysis that would reduce an entire mobility table to a single number, such as a correlation coefficient.

An index of the extent to which the respondent's own status depends on that of his father is given by the difference between the uncertainty in the marginal distribution of destinations and the average conditional uncertainty, that is, the amount by which uncertainty is reduced, on the average, when the occupation of the respondent's father is learned. Here again, the two cities are nearly identical.

Thus, we have found what one might expect to find in many such comparisons: A gross comparison, such as average conditional uncertainty, or average reduction in uncertainty when origin is learned, reveals little difference. But a finer analysis, such as the conditional uncertainty for each of a number of origin categories, reveals differences worth noting but which essentially cancel each other out in a gross analysis.

CONCLUSION

The methods used in this paper treat category data as category data, and thus avoid some of the powerful assumptions required for certain other methods, such as correlation. At the same time, they provide a finer analysis of a mobility matrix, revealing aspects of mobility which would be masked by more gross methods.

In concluding, we would like to note that these methods can be extended further, to the analysis of multivariate uncertainty. Thus one could consider the uncertainty involved in a cross-classification of occupation by father's occupation by educational level by race, for example. But that is a topic for another paper.

REFERENCES

Ash, Robert B. 1965. *Information Theory.* New York: Interscience.
Barber, Bernard. 1957. *Social Stratification.* New York: Harcourt, Brace & World.
Blau, Peter M., and Otis Dudley Duncan. 1967. *The American Occupational Structure.* New York: Wiley.
Cooley, Charles Horton. 1909. *Social Organization.* New York: Scribner.
Duncan, Otis Dudley. 1961. "A Socioeconomic Index for All Occupations" and "Properties and Characteristics of the Socioeconomic Index." In *Occupations and Social Status,* edited by Albert J. Reiss, Jr., with collaborators. New York: Free Press.
———. 1965. "The Trend of Occupational Mobility in the United States." *American Sociological Review* 30:491–98.
———. 1966. "Methodological Issues in the Analysis of Social Mobility." In *Social Structure and Mobility in Economic Development,* edited by Neil J. Smelser and Seymour Martin Lipset. Chicago: Aldine.
———. 1968. "Patterns of Occupational Mobility among Negro Men." *Demography* 5:11–22.
Fano, Robert M. 1961. *Transmission of Information.* Cambridge: MIT Press.
Garner, Wendell R. 1962. *Uncertainty and Structure as Psychological Concepts.* New York: Wiley.
Geiger, Theodore. 1951. "Soziale Umschichtungen in einer Danischen Mittelstadt." *Acta Jutlandica* 23, no. 1.
Glass, David V., ed. 1954. *Social Mobility in Britain.* London: Routledge & Kegan Paul.
Glass, David V., and J. R. Hall. 1954. "Social Mobility in Great Britain." In *Social Mobility in Britain,* edited by David V. Glass. London: Routledge & Kegan Paul.

Goldman, S. 1953. *Information Theory*. Englewood Cliffs: Prentice Hall.

Goodman, Leo A. 1965. "On the Statistical Analysis of Mobility Tables." *American Journal of Sociology* 70 (March): 564–85.

Goodman, Leo A., and William H. Kruskal. 1954; 1959; 1963. "Measures of Association for Cross Classifications," *Journal of the American Statistical Association* 49:732–64; 54:123–63; 58:310–64.

Gordon, Milton M. 1958. *Social Class in American Sociology*, New York: McGraw-Hill.

Hodge, Robert W., Paul M. Siegel, and Peter H. Rossi. 1966. "Occupational Prestige in the United States: 1925–1963," In *Class, Status, and Power*, 2d ed., edited by Reinhard Bendix and Seymour Martin Lipset. New York: Free Press.

Hodge, Robert W., Donald J. Treiman, and Peter H. Rossi. 1966. "A Comparative Study of Occupational Prestige." In *Class, Status, and Power*, 2d ed., edited by Reinhard Bendix and Seymour Martin Lipset. New York: Free Press.

Inkeles, Alex, and Peter H. Rossi. 1956. "National Comparisons of Occupational Prestige." *American Journal of Sociology* 61 (January):329–39.

Kahl, Joseph A., and James A. Davis. 1955. "A Comparison of Indexes of Socio-Economic Status." *American Sociological Review* 20:317–25.

Khinchin, A. I. 1957. *Mathematical Foundations of Information Theory*. New York: Dover.

Levine, Joel H. 1967. "Measurement in the Study of Intergenerational Status Mobility." Ph.D. thesis, Harvard University, Department of Social Relations.

Lipset, Seymour M., and Reinhard Bendix. 1959. *Social Mobility in Industrial Society*. Berkeley: University of California Press.

Lopreato, Joseph. 1965. "Social Mobility in Italy." *American Journal of Sociology* 71 (November):311–14.

Marsh, Robert M. 1967. *Comparative Sociology*. New York: Harcourt, Brace & World.

Matras, Judah. 1960. "Comparison of Intergenerational Occupational Mobility Patterns." *Population Studies* 14:163–69.

Milic, Vojin. 1965. "General Trends in Social Mobility in Yugoslavia." *Acta Sociologica* 9:116–36.

Miller, S. M. 1960. "Comparative Social Mobility." *Current Sociology* 9:1–89.

Mosteller, Frederick. 1968. "Association and Estimation in Contingency Tables." *Journal of the American Statistical Association* 63:1–28.

Pfautz, Harold W., and Otis Dudley Duncan. 1950. "A Critical Evaluation of Warner's Work in Community Stratification." *American Sociological Review* 15:205–15.

Rao, C. R. 1965. *Linear Statistical Inference and Its Applications*. New York: Wiley.

Rogoff, Natalie. 1953. *Recent Trends in Occupational Mobility*. Glencoe: Free Press.

Shannon, Claude E., and Warren Weaver. 1949. *The Mathematical Theory of Communication*. Urbana: University of Illinois Press.

Svalastoga, Kaare. 1961. "Gedanken zu internationalen Vergleichen sozialer Mobilität." In *Sociale Schichtung und soziale Mobilität*, edited by David V. Glass and Rene Konig. *Kölner Zeitschrift für Soziologie und Sozialpsykologie*, Sonderheft 5.

———. 1964. "Social Differentiation." In *Handbook of Modern Sociology*, edited by R. E. L. Faris. Chicago: Rand McNally.

———. 1965a. *Social Differentiation* New York: David McKay.

———. 1965b. "Social Mobility: The Western European Model." *Acta Sociologica* 9: 175–82.

Theil, Henri. 1967. *Economics and Information Theory*. Chicago: Rand McNally.

Perceptions and Expectations of the Legislature and Support for It[1]

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In this study, based on a random household probability sample of 1,001 Iowa adults, the basic hypothesis is that congruence between perceptions and expectations about the legislature leads to high support for the legislature, and incongruence between perceptions and expectations leads to low support for the legislature. Data from the Iowa sample provide tentative confirmation of this hypothesis. Congruent and incongruent groups on each of ten factors were compared on their levels of legislative support. For each factor, the congruent group had a higher mean support score than did the incongruent group, although in only five cases was this difference statistically significant. The results do suggest that support for the political system, or some subsystem of it, is dependent to some extent upon congruencies in the mass public between expectations and perceptions of the system.

This report is a detailed analysis of images of political authority structures which emerge from theoretical concerns of Talcott Parsons and David Easton. Neither of them, however, directly suggested the particular hypothesis our analysis tests. While we have generally followed Easton's nomenclature in establishing the theoretical context of our investigation, sociologists will find that our analysis can as easily be couched in Parsonian terms. In brief, this investigation can be located in Parsons's paradigm of the societal interchange system within the interchange between the goal-attainment subsystem and the integrative subsystem. More specifically, we are dealing with interchanges between legislative collectivities and the public. Our analysis focuses explicitly upon what Parsons has called "generalized support" (1960, pp. 170–98; 1966, pp. 71–112; 1967, pp. 223–63).

If we conceive of a legislative institution as a part of a legislative system, in Easton's (1963, pp. 153–340) terms, we can see that most of the available

analyses of interactions between legislative systems and their environments have been in terms of *demands*. Thus, a great deal of the work on legislative politics has focused on constituency or party pressures, interest-group demands, or executive control. Very little research has focused upon citizen *support* of the legislature as a political institution (Jewell and Patterson 1966, pp. 339–57).

Our analysis of citizens' legislative support is based on a number of assumptions. First, we assume that the persistence and maintenance of legislative systems is heavily dependent on some adequate level of public support. We have found very little encouragement in research findings for imputations of high levels of citizen knowledge, concern, choice capability, or party issue awareness from "demand-input models" of mass public-legislature relations (Wahlke 1967). Thus we are inclined to think that it is now appropriate to think of legislative representation from the perspective of support as well as of demands.

Second, we assume that meaningful support for a legislature is not likely to flow in the general population from specific policy output. Rather it comes from diffuse predispositions in the mass public to (a) commitment to the legislature as a representative institution and (b) to compliance with its enactments. As a result, our research has focused on public attitudes toward the legislature as such, and not upon popular support for particular policy alternatives or specific legislation.

Finally, we have assumed that (a) generalized predispositions in the mass public to support the legislature as an institution can be measured by using standard attitude assessment techniques, and that (b) citizens will differ in their relative legislative support.[2] The field research which sought to operationalize citizens' legislative support and a host of other variables thought to be related to support was conducted in Iowa in November 1966. A household probability sample of 1,001 adults, representing the population of the state, was interviewed by professional staff under the auspices of the Iowa Laboratory for Political Research. Seven attitudinal statements about the legislature were used to measure support (to be discussed in detail later), and, by combining these items, respondents were scored in terms of their relative support for the legislature.

The basic hypothesis to be dealt with in this paper is that *legislative support in the mass public is a function of congruencies between perceptions of the legislature and expectations about it*. We expect high levels of legislative support from citizens whose feelings about what the legislature is like come close to their expectations of it. And, low levels of legislative support should be exhibited by those for whom there are wide gaps between their perceptions of the legislature and what they expect of it. Theoretically, a severe crisis of support should occur for legislative systems in which there is a very wide gap between what citizens expect it to be like and how they actually perceive it to be operating. Wide gaps in civic perception-expectation dif-

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[2] For a report from this project which identifies the degrees of legislative support in different social and political strata, see G. R. Boynton, Samuel C. Patterson, and Ronald D. Hedlund (1968).

ferentials of this sort for substantial proportions of the population presumably contribute heavily to political reforms or, ultimately, to revolution.[3] These relationships are summarized in figure 1. The curve in the figure plots a measure of aggregated differentials between citizen perceptions and expectations about the legislature. The curve is S-shaped and skewed to the upper right because we would expect sharper correlations between perception-expectation differentials and support in the middle ranges of the former. And we would expect, in the American case, a higher incidence of positive support than of low support. We expect our Iowa data
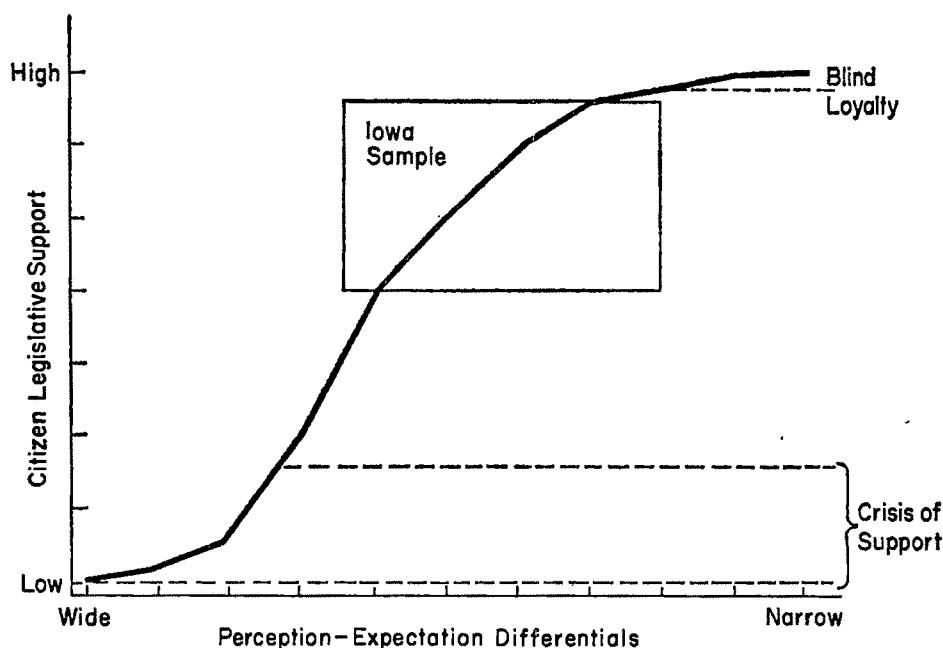
FIG. 1

to fall somewhere within the box in the center of the diagram because citizens' legislative support levels are generally high, and great gaps between expectations and perceptions do not appear to occur.

Figure 2 adds time to the hypothesis, and presents the case in which the perception of the legislature falls somewhat (but tolerably) below the expectation of the legislature for a period of time. But hypothetically, an increasing disparity between the two produces a crisis of support which might ultimately result in sufficient stress on the system to lead to revolutionary change. Though time is an obvious factor in our theoretical scheme, our data are cross-sectional so we can deal only with one point in time.

[3] See, for instance, James C. Davies (1962) and Raymond Tanter and Manus Midlarsky (1967).

These comments may clarify our analytical tasks. We need to compare measurements of civic perception-expectation differentials and measurements of legislative support. How can what we have been calling civic perception-expectation differentials be measured? We have sought to do this with two sets of data from the Iowa survey. One set of data was developed from a series of interview questions asking respondents to scale on a one–ten metric a series of actors or agencies by whom legislators should be influenced, and in the same way to scale the same agencies in terms of whether
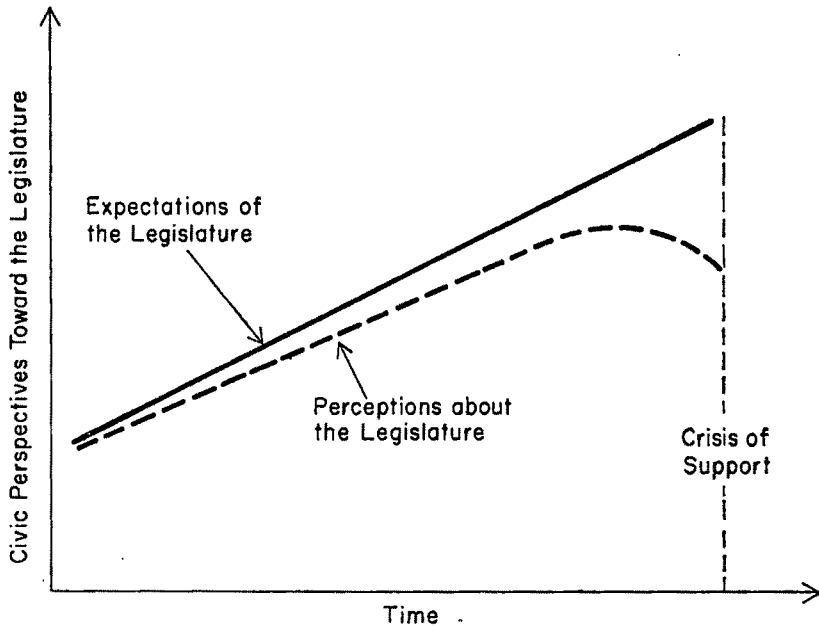
FIG. 2

respondents thought legislators were influenced by them. The metric for each item looked like this:

```
┌───┬───┬───┬───┬───┬───┬───┬───┬───┐
1   2   3   4   5   6   7   8   9   10
least influenced              most influenced
```
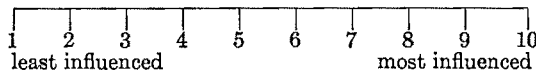
First, each respondent scored a series of items like, "Legislators should be influenced by the opinions of the citizens of their districts." Later in the interview, schedule respondents scored the same kinds of items in the form, "Legislators are influenced by the opinions of the citizens in their districts." Differences between the "is" and "ought" scoring for each respondent generated his perception-expectation differential score.

Essentially the same procedure was used to assess respondents' perception-expectation differentials with regard to the characteristics of legisla-

tors. We confronted respondents with a set of characteristics which legislators might exhibit, and we asked them to tell us to what extent legislators ought to have the attribute in question, and to what extent members of the legislature had these characteristics.

Thus, we have not sought to measure expectations and perceptions of the legislature as a vague abstraction. Rather, respondents were asked to deal with two concrete aspects of legislative representation: influence agencies

TABLE 1

DIFFERENCES BETWEEN INFLUENCE IN THE IOWA LEGISLATURE AGENCIES
OUGHT TO HAVE AND INFLUENCE THEY DO HAVE

($N = 1,001$)

LEGISLATIVE INFLUENCE AGENCIES	SAY AGENCY HAS LESS INFLUENCE THAN IT SHOULD (%)	ARE CONGRUENT (%)	SAY AGENCY HAS MORE INFLUENCE THAN IT SHOULD (%)	INFLUENCE AGENCY OUGHT TO HAVE		INFLUENCE AGENCY DOES HAVE		MEAN DIFFERENCE
				Mean	Rank	Mean	Rank	
Constituents........	43.7	48.2	8.2	8.20	1	6.84	1	−1.36
Statewide opinion polls............	34.2	50.3	15.6	6.72	2	6.13	3	− .59
Experts in legislature.............	29.3	52.2	18.6	6.64	3	6.24	2	− .40
Experts in state gov't.............	25.1	53.9	16.0	6.42	4	6.19	5	− .23
Governor..........	13.8	47.9	38.4	4.92	5	5.99	6	+1.07
Labor.............	18.0	43.6	31.2	4.58	6	5.64	7	+1.06
Party leaders in the legislature.......	8.6	36.3	40.3	4.51	7	6.13	3	+1.62
Chamber of Commerce.......	20.2	57.6	22.3	4.17	8	4.39	10	+ .22
Farm Bureau.......	15.8	44.2 ·	34.7	4.12	9	4.99	9	+ .87
Chairmen of state parties..........	9.4	45.0	45.7	3.80	10	5.58	8	+1.78
National Farmers Organization.....	14.6	56.7	27.7	3.59	11	4.15	12	+ .56
Banks.............	10.9	40.0	29.3	3.19	12	4.22	11	+1.03
Insurance companies	7.9	53.6	38.6	2.58	13	4.11	13	+1.53

and the characteristics of legislators. Since responses to our questions about these two matters have considerable intrinsic interest, and we need to explicate the shape of our data regarding them so that our use of them in analyzing support can be better understood, we shall now present the aggregate results from the Iowa sample.

PUBLIC ATTITUDES TOWARD LEGISLATIVE INFLUENCE

Our respondents rated the thirteen agencies of legislative influence listed in table 1. First, they indicated on a ten-point scale the ones which they thought ought to be influential in the legislature; then, they rated them

again in terms of the degree of influence they thought the influence agencies actually had. We will present three separate analyses of the responses from the two ratings of influence agencies. Table 1 shows two analyses. The first simply shows the distribution of respondents dealing with each agency of influence separately. We divided the distribution into three categories. The "congruent" group consists of respondents who, within a latitude of three points on the rating scale, felt the particular agency in question had about as much influence as it ought to have. On either side of this congruent group we show the proportions of the sample who felt the particular agency had more or less influence than it should. The second analysis in table 1 shows the sample means for each rating, the rank orders, and the differences between means.

It is plain from table 1 that there are discontinuities among agencies of influence with the legislature in terms of public perceptions and expectations. Of the agencies rated, constituents are thought to be the most underrepresented in terms of influence in the legislature. Forty-four percent of the Iowa sample felt that constituents have less influence in the legislature than they should have, while they ranked first as the agency that ought to have such influence. Although ratings of constituent influence produced a large negative mean difference between expectations and perceptions of influence, constituents were also rated by respondents as the agency which has the most influence in the legislature. In general, the order of expected and perceived influence follows that of (1) constituents and polls reflecting public opinion, (2) experts, (3) party leaders, and (4) interest groups. For constituents, polls, and experts, respondents tended to feel that agencies have *less* influence than they should in greater proportions than the view that they have *more* influence than they should. For all of the other agencies of influence, a higher proportion of respondents felt they had more influence than they should rather than less. The rank order correlation between perceived and expected influence agencies is very high ($r_s = .91$).

The largest gaps in differences in mean rankings are for legislative and extralegislative party leaders. Legislative party leaders fall at the median rank in expected influence, but are ranked third by respondents in the aggregate in perceived actual influence (tied with statewide public opinion polls). But a relatively high proportion of the respondents felt party leaders have more influence in the legislature than they should. Again, note that 46 percent of the Iowa sample indicated that state party chairmen have more influence than they should. The difference of score means here is very high and positive (they score higher in perceived than in expected influence).

Interest groups generally fall at the bottom of the rank orders of perceived and expected influence. Unlike constituents and experts, who show a negative difference between expected and perceived influence, but like party leaders (including the governor), interest groups are thought to have more influence than they should. Labor, banks, and insurance companies show the highest differences in means, while farm organizations and the

chamber of commerce show the least differences between expected and perceived influence.

Table 2 shows the results of a factor analysis of the "ought" responses from this analysis. Four factors were extracted and rotated by the Kaiser varimax method. The factorial structure of responses rating the influence agencies ought to have is very clear-cut and conforms exactly to our intuitive groupings. The same factor analysis was run for responses to the ratings of perceived actual influence, and this analysis produced virtually the same factorial structure, so we have not shown it. The factor analysis reinforces with concrete evidence our tendency to talk about perspectives on the Iowa

TABLE 2

FACTOR ANALYSIS OF AGENCIES WHICH OUGHT TO
BE INFLUENTIAL IN THE LEGISLATURE

LEGISLATIVE INFLUENCE AGENCIES	FACTORS			
	I	II	III	IV
1. Farm Bureau....................	.793	.018	−.177	.011
2. National Farmers Organization....	.776	−.038	−.133	.182
3. Insurance companies............	.631	.188	.244	.265
4. Labor.........................	.616	.158	−.083	.266
5. Banks........................	.569	.177	.245	.459
6. Chamber of Commerce..........	.522	.305	.023	.390
7. Legislative experts.............	.085	.857	−.067	.131
8. Experts in state government......	.160	.794	−.111	.187
9. Statewide public opinion polls....	.095	−.031	−.822	.190
10. Constituents...................	.011	.365	−.612	−.100
11. Party leaders in legislature	.082	.151	−.031	.838
12. Chairmen of state parties........	.291	.123	.022	.762
13. Governor.....................	.272	.054	−.205	.527
Cumulative total variance (%).....	33.6	45.1	54.1	61.6
Cumulative explained variance (%).	54.6	73.3	87.9	100.0

NOTE.—Items *1–6*, interest groups; *7, 8*, experts; *9, 10*, constituents and polls reflecting public opinion; *11–13*, party leaders.

influence structure in terms of four major groups of agencies rather than thirteen separate agencies.

From the standpoint of our analytical objectives, it is comforting to find some variance in perceptions and expectations of influence. From the point of view of the stability of the Iowa political system, it can be suggested that there does appear to be a relatively high degree of congruity between expected and perceived influence. Not only do Iowans tend to feel that influence lies about where it ought to, but they tend to regard the system as structured such that citizens have the most influence on the legislature and interest groups the least influence, with experts and party leaders occupying the middle ground. Both the perceived and expected influence structures and the congruency between them undoubtedly indicate satisfaction with the system and should mean generally high levels of legislative support in this population.

CIVIC PERSPECTIVES ON LEGISLATOR ATTRIBUTES

What kind of a person *should* a legislator be in the minds of his constituents? and, What do constituents think legislators *are* like? If citizens' images of legislators depart severely from their conceptions of the kinds of people who should represent them, then support for the legislature is likely to be low. We asked respondents in the Iowa sample to evaluate a set of twenty attributes which have variously been suggested as characteristics legislators have, or ought to have. These attributes are listed in table 3. First, respondents were asked to indicate to what extent they thought legislators ought to have each attribute, ranking each on this scale:

1	2	3	4
very important	pretty important	not too important	not at all important
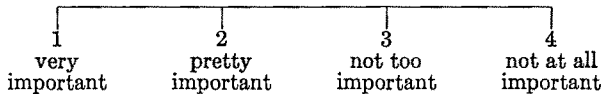
Then, respondents were asked to make judgments about roughly what proportion of the members of the legislature actually had each attribute, gauging them on this scale:

1	2	3	4	5
all	most	half	few	none
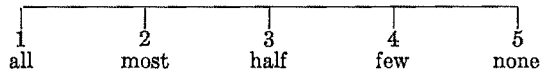
The entries of mean scores in table 3 were generated by assigning one–four points for responses to the first set of rankings, and scoring respondents from one to five on the second set.

As a group, the respondents in the Iowa sample ranked attributes of good character, knowledge and ability, and social status highest, and they ranked attributes of personal gain or manipulation lowest. When the rank orders for attributes legislators have are compared to ranks for characteristics they should have, some rather dramatic shifts occur, especially at the top of the ranks. While being completely honest ranks first as a trait legislators should have, it drops to the median rank of attributes legislators are perceived to possess. The highest ranking for perceived attributes is for political party loyalty. On the other hand, citizens tend to regard legislators as more friendly, influential in their districts, and prestigious than they should be, in terms of ranked importance. At the same time, the two ranked orderings are highly correlated $(r_s = .64)$.

It is apparent that the items listed in table 3 could be grouped into several sets, and doing so helps to reduce the complexity of dealing with twenty categories. More importantly, we were interested in a clear analysis of what we were measuring in assessing differences between expected and perceived legislative attributes. Thus, we factor analyzed both the ratings of characteristics respondents felt it was important for legislators to have and those attributes respondents felt actually characterized the legislature.[4]

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[4] Because two of the items in table 3 did not produce unambiguous factor loadings ("friendly toward others" and "just an average citizen"), they were omitted from further analysis.

The factor analysis of legislator attributes is displayed in table 4; the factorial structure for actual perceived characteristics is so similar that we have not shown it. Six factors accounted for more than half of the variance in scores, and the factorial structure is quite unambiguous. We have added to the factor analysis presented in table 4 the mean of the means of items from table 3 included in each factor, and the rank order of factors based upon these means.

The highest ranking factor in terms of mean scores, Factor II, included items having to do with the purposive activity of legislators and is among the top two factors in accounting for variance explained. The second rank-

TABLE 3

MEANS AND RANKS OF SCORES FOR CHARACTERISTICS
OF LEGISLATORS

$(N = 1,001)$

CHARACTERISTICS OF LEGISLATORS	IMPORTANT FOR LEGISLATORS TO HAVE THE CHARACTERISTIC		EXTENT TO WHICH LEGISLATORS ACTUALLY HAVE CHARACTERISTIC	
	Mean	Rank	Mean	Rank
Completely honest....	1.08	1	2.50	10
Study problems thoroughly.........	1.18	2	2.36	8
Know will of people of district............	1.27	3	2.31	7
Hard working........	1.30	4	2.30	6
Interested in serving others.............	1.32	5	2.26	5
Special knowledge about state government.............	1.46	6	2.40	9
Friendly toward others	1.51	7	2.14	2
High prestige in community........	1.64	8	2.17	4
Influential in own district.............	1.64	9	2.16	3
Concerned with small details............	1.97	10	3.01	17
Trained in legal work..	2.01	11	2.84	15
Just an average citizen............	2.09	12	2.51	11
Loyal to his political party.............	2.14	13	2.06	1
College graduate......	2.46	14	2.66	12
Change things slowly if at all..............	2.51	15	3.10	18
Held previous office...	2.55	16	2.69	14
Between ages 45–55...	2.78	17	2.68	13
Political beliefs that do not change.........	2.92	18	2.85	16
Only interested in reelection..........	3.58	19	3.35	19
Seek personal gain or profit.............	3.64	20	3.54	20

TABLE 4

FACTOR ANALYSIS OF CHARACTERISTICS LEGISLATORS OUGHT TO HAVE

CHARACTERISTICS OF LEGISLATORS	I	II	III	IV	V	VI	MEANS OF ITEMS INCLUDED IN FACTOR	RANK OF IMPORTANCE OF FACTORS
1. Held previous office	.719	—.007	.091	—.043	—.047	.105	2.45	4
2. Trained in legal work	.686	.141	.000	—.036	.247	—.007		
3. College graduate	.583	.074	—.029	—.047	—.036	.336		
4. Between ages 45–55	.471	—.062	.341	—.040	.114	.142		
5. Interested in serving others	—.009	.804	.043	—.084	.059	.010	1.32	1
6. Study problems thoroughly	—.082	.737	.007	—.174	.062	.047		
7. Special knowledge of state gov't	.345	.713	—.007	—.004	—.012	—.085		
8. Hard working	.057	.436	—.193	—.340	—.052	.289		
9. Seek personal gain or profit	.018	—.067	.813	—.001	.058	.018	3.61	6
10. Only interested in reelection	.109	.004	.755	—.027	.010	.130		
11. Influential in own district	.333	—.069	.133	—.653	.055	—.131	1.45	2
12. Know will of people in district	—.143	.323	.039	—.637	—.152	—.169		
13. Completely honest	.169	.101	—.105	.552	.144	.226		
14. High prestige in community	.250	.147	—.037	.513	.088	.166		
15. Concerned with details	.054	.078	—.063	—.138	.804	—.121	2.24	3
16. Change things slowly	.112	—.006	.206	.043	.655	.256		
17. Political beliefs that don't change	.091	—.023	.275	.073	.052	.703	2.53	5
18. Loyal to political party	.287	.020	—.009	—.167	.040	.691		
Cumulative total variance (%)	16.8	30.1	36.9	43.2	49.3	55.0	....	.....
Cumulative explained variance (%)	30.6	54.6	67.0	78.5	89.6	100.0	....	.....

NOTE.—Items *1–4*, experience factor; *5–8*, purposive activity; *9, 10*, self-motivation; *11–14*, community status; *15, 16*, slow and deliberate change; *17, 18*, party loyalty.

ing factor, Factor IV, including honesty, knowledge of and influence in the legislative district, and community prestige, can be given the summary label the "community status" factor. The factor ranking third, Factor V, can be called the "slow and deliberate change" factor from the manifest character of the two items highly loaded on it. The fourth ranking factor in terms of means, Factor I, accounts for nearly one-third of the explained variance and deals with the experience or preparation of legislators. The party loyalty factor, Factor VI, ranks fifth in mean scores, followed by self-motivation, Factor III. The factor analysis and mean scores for the twenty legislator attributes rated by respondents suggest, therefore, the following hierarchy of expectations about the characteristics of legislators: (1) purposive activity, (2) community status, (3) slow and deliberate change, (4) experience, (5) party loyalty, and (6) self-motivation. A similar analysis was carried out for respondents' ratings of the twenty basic attributes in terms of whether legislators actually exhibited them. The rankings of similar factors for perceived actual attributes were: (1) community status, (2) purposive activity, (3) party loyalty, (4) experience, (5) slow and deliberate change, and (6) self-motivation. This shift in the rankings of factors suggests the nature of differences between Iowans' expectations and perceptions of legislator attributes. The community status and purposive activity factors reverse positions; party loyalty exchanges places with slow and deliberate change; experience remains fourth in rank, and self-motivation is at the bottom of both rankings.

MEASUREMENT OF LEGISLATIVE SUPPORT

We measured our dependent variable—public support for the legislature—with seven Likert-type items, which are given in table 5. These items measure the degree of citizens' commitment to the legislature as an institution and their predispositions to compliance with its enactments. In the table we have simply shown responses trichotomized as high, medium, or low support. We have factor analyzed these items, and two distinct factors develop. One is a compliance factor and the other is an institutional commitment factor. Since raw scores from these separate factors are highly correlated ($r = .66$), our measurement of the dependent variable will proceed from the data for all seven items together.

Although the data in table 5 make it clear that large proportions of the Iowa respondents expressed attitudes of compliance with the laws passed by the legislature, preference for legislative lawmaking, and commitment to the existence of the legislature as an institution, some notable variations are evident. The least support of the legislature was evinced by the question of the governor taking the law into his own hands rather than waiting for the legislature to act. More than one-fourth of the sample agreed that there were times when the governor should do this and only 12 percent strongly disagreed. Nearly one-sixth agreed that sometimes citizens should take the law into their own hands without waiting for the legislature to take action, although more than one-half disagreed and more than one-fourth disagreed strongly.

TABLE 5

ATTITUDES OF SUPPORT TOWARD THE IOWA LEGISLATURE
(%)

LEGISLATIVE SUPPORT ITEMS	DIRECTION OF SUPPORT	LEGISLATIVE SUPPORT				
		High	Medium	Low	Don't Know	TOTAL
There are times when it almost seems better for the citizens of the state to take the law into their own hands rather than wait for the state legislature to act............	Disagree	28.0	51.7	14.4	5.9	100.0
If you don't particularly agree with a state law, it is all right to break it if you are careful not to get caught............	Disagree	42.1	52.6	2.1	3.2	100.0
There are times when it would almost seem better for the governor to take the law into his own hands rather than to wait for the state legislature to act............	Disagree	11.8	54.0	25.8	8.4	100.0
Even though one might strongly disagree with a state law, after it has been passed by the state legislature one ought to obey it................	Agree	21.6	71.7	2.9	3.8	100.0
One should be willing to do everything that he could to make sure that any proposal to abolish the state legislature were defeated...............	Agree	9.8	62.6	13.9	13.7	100.0
If the Iowa legislature continually passed laws that the people disagreed with, it might be better to do away with the legislature altogether	Disagree	16.4	62.1	12.4	9.1	100.0
It would not make much difference if the constitution of Iowa were rewritten so as to reduce the powers of the state legislature............	Disagree	6.9	59.2	12.1	21.8	100.0

NOTE.—N = 1,000 male adults.

In contrast, very marked support for the legislature was indicated by the high proportion in the sample of those whose responses showed that they felt citizens ought to comply with laws passed by the legislature whether they agreed with them or not. Less than 3 percent were willing to agree that it was all right to disobey the law. These data suggest that, for some people, extraordinary action by the governor or by citizens can sometimes be acceptable substitutes for the legislative process. But outright failure to comply when the legislative authority has been exercised is rarely acceptable.

There was a higher incidence of no response to the question on the items involving retention of the legislature and reduction of its powers, but the pattern for the three items is quite similar for those who did respond. Across these items, about 12 percent were willing to consider abolishing the legislature or reducing its constitutional powers. More than two-thirds did not wish to reduce legislative power; 72 percent agreed that proposals to abolish the legislature should be defeated, and more than 78 percent disagreed that the legislature should be abolished if it persistently passed disagreeable laws.

PERCEPTION-EXPECTATION DIFFERENTIALS AND SUPPORT

Although the general level of public support for the Iowa legislature seems very high, it is variable enough for analytical purposes. We can proceed now to test our basic hypothesis, which we shall do by testing two sub-hypotheses:

a) If there is a wide differential between the legislative influence citizens perceive is wielded by interest groups, constituents, experts, and party leaders, and the influence citizens expect they ought to have, then legislative support will tend to be low. If perceived and expected influence are roughly congruent, legislative support will tend to be high.

b) If there is a wide differential between the attributes which citizens perceive as actually characterizing legislators and their expectations about what a legislator ought to be like, then legislative support will tend to be low. If perceived and expected attributes are roughly congruent, legislative support will tend to be high.

We are now in a position to present the analysis of these hypotheses.

The conditions in the Iowa data obviously are not ideal for the support of these hypotheses. The sample is very homogeneous in that support for the legislature is very high and not extraordinarily variable, and there are not great gaps between expectations about the legislature and perceptions of it in the terms in which we have measured these things. If there is any substantial support in the data for our hypotheses, we would consider the test a strong one, since they have been tested in an unlikely place for dramatic support of them.

We have tested our two subhypotheses in the following manner: for each set of factors (shown in tables 2 and 4) for expectations and perceptions we selected the most congruent and the most incongruent respondents on the basis of two criteria: consistency of responses and level of expectations. The application of these criteria led to the selection of respondents which would juxtapose the most congruent and the most incongruent perception-

expectation responses for each factor. Respondents were also factor scored from the principal component analysis of the legislative support items, so that differences between congruent and incongruent respondents could be assessed in terms of mean factor scores for legislative support. The tests for mean differences in support between congruent and incongruent groups with respect to both subhypotheses are arrayed in table 6. As a whole, this array displays means which do not show great absolute differences. However, for half the factors, differences between extreme congruent and incongruent groups in support for the legislature were statistically significant. Insofar as so-called influence agency factors were concerned, significant differences did occur between congruent and incongruent respondents with

TABLE 6

MEAN LEGISLATIVE SUPPORT SCORES FOR CONGRUENT AND INCONGRUENT
PERCEPTION-EXPECTATION GROUPS

| | PERCEPTION-EXPECTATION DIFFERENTIALS | | | | SIGNIFICANT DIFFERENCES (t-test) |
| | Congruent | | Incongruent | | |
FACTORS	Mean	N	Mean	N	
Influence agency factors:					
Public.................	2.39	61	2.16	178	$p < .05$
Experts.................	2.34	175	2.20	65	N.S.
Interest groups...........	2.31	179	2.09	35	$p < .05$
Party leaders............	2.29	90	2.18	162	N.S.
Legislator attribute factors:					
Purposive activity........	2.22	125	2.19	93	N.S.
Community status........	2.51	150	2.10	81	$p < .01$
Slow and deliberate change	2.35	116	2.27	95	N.S.
Experience..............	2.34	157	2.19	78	$p < .05$
Party loyalty............	2.25	134	2.17	88	N.S.
Self-motivation..........	2.46	144	2.25	91	$p < .01$

respect to general public and interest group influence. In both cases, mean differences were significant at the .05 level. With respect to legislator attribute factors, significant differences were extant for half of the factors. Mean legislative support scores of congruent and incongruent groups were different at the .01 level for the community status and self-motivation factors, and different at the .05 level for the experience factor. Furthermore, in the cases of the other factors, mean legislative support in the congruent group was somewhat higher than in the incongruent group, although the differences were not statistically significant.

CONCLUSION

The basic hypothesis tested in this paper is that congruence between perceptions and expectations about the legislature leads to high support for the legislature, and incongruence between perceptions and expectations leads

to low support for the legislature. The Iowa sample provides tentative confirmation of this hypothesis. There is a quite remarkable congruence between perceptions and expectations in Iowa. The very high correlation between the rankings of perceptions and expectations is a clear indication of this congruence. Support for the legislative institution in Iowa is also quite high. This is indicated in table 5, where the answers to the seven items dealing with support are presented. Another indication of this high level of support can be given. When the answers to the seven support items are combined, a scale of support can be developed with a range from a low score of four to a high score of twenty-eight. The mean for the total sample is 22.3, which is highly skewed in the supportive direction. Thus, as they are measured for the Iowa sample, congruence between perceptions and expectations is high and support for the legislature is high, suggesting the validity of the basic hypothesis.

Congruent and incongruent groups on each of ten factors were compared on their levels of legislative support. For each factor, the congruent group had a higher mean support score than did the incongruent group; however, in only five cases was this difference statistically significant. While each of these groups constitutes only a small subset of the total sample, the analysis of their support scores adds confirmation to the general hypothesis we have explored.

We already have shown that support for the legislative system is sensitive to differences in social and political structure (Boynton, Patterson, and Hedlund 1968). Legislative support increases as one looks from the bottom to the top of the structure of socioeconomic status, and is greater at high than at low levels of political awareness and participation. One of the next steps in our analysis will be to investigate the nexus between perception-expectation differentials and differences in social and political structure as joint determinants of variations in support for the legislature.

REFERENCES

Boynton, G. R., Samuel C. Patterson, and Ronald D. Hedlund. 1968. "The Structure of Public Support for Legislative Institutions." *Midwest Journal of Political Science* 12 (May):163–80.
Davies, James C. 1962. "Toward a Theory of Revolution." *American Sociological Review* 27 (February):5–19.
Easton, David. 1963. *A Systems Analysis of Political Life.* New York: Wiley.
Jewell, Malcolm E., and Samuel C. Patterson. 1966. *The Legislative Process in the United States.* New York: Random House.
Parsons, Talcott. 1960. *Structure and Process in Modern Societies.* New York: Free Press.
———. 1966. "The Political Aspect of Social Structure and Process." In *Varieties of Political Theory,* edited by David Easton. Englewood Cliffs, N.J.: Prentice-Hall.
———. 1967. *Sociological Theory and Modern Society.* New York: Free Press.
Tanter, Raymond, and Manus Midlarksky. 1967. "A Theory of Revolution." *Journal of Conflict Resolution* 11 (September):264–80.
Wahlke, John C. 1967. "Public Policy and Representative Government: The Role of the Represented." Paper presented at the Seventh World Congress of the International Political Science Association, Brussels, September.

Student Politics and Political Systems: Toward a Typology

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Prevailing analyses of student politics focus upon noninstitutionalized modes of political behavior and upon the social-psychological attributes of participants. This approach tends to ignore the importance of structural links between political system, university, institutionalized, and noninstitutionalized student politics. The major forms in which institutionalized student politics appear in different nations are closely linked to the attributes of the political and educational systems of each nation. The major system linkages which determine these forms are government control over university structure and financing, and recruitment to political careers through party sponsorship of university student aspirants. The prevailing form of institutionalized student politics where both of these links are present is factional competition among political party branches. Where both are absent, university student government prevails. Where recruitment is low and government control is strong, national student unions predominate and, where the reverse condition obtains, political party branches and clubs. A rationale for the typology is presented, and its application to four cases. The relative persistence and effects of the student movement are then discussed in terms of the movement's emergence in one or another of the four situations defined in the typology.

The relatively sudden appearance of student activism on American campuses has produced a variety of explanations. Some of these have a built-in obsolescence as the observer finds that events overtake him. The events at Berkeley may now seem pale in the light of the outbreak at Columbia. The structure of a prominent group of activists or of the entire body may change as the issues move from nonviolence in the South to opposition to the administration over Vietnam, while the epidemic of student violence sweeping Europe demands a comparative perspective. Is there anything in common among the demonstrators at Sproul Hall, the students who took over Hamilton Hall, the heart of the college at Columbia, the Berkeley fringe currently allying with the Black Panthers and supporting some of them in running

for state office, the students at Leeds University in England who trampled the wife of a Conservative party member of Parliament, the French students who precipitated a national crisis, and the German students who took particular aim at Axel Springer? By the same token, what are the broad differences between these outbreaks? One need not stop here; we may also wonder about student activism in developing nations and in semideveloped Latin America.

Studies of American activism fall into three identifiable categories. The first identifies the activists and compares them with control groups of non-activists. Flacks (1967) and Trent and Craise (1967) have argued that a majority of the activists tend to be the brightest and ablest students at high-quality universities, from above-average socioeconomic backgrounds, and with a wide spectrum of occupational opportunities open to them. They are in fact the privileged. Those who are not so bright, able, privileged, and activist are more liberal than their peers who did not go to college because "exposure to and persistence in college is associated with an increase in intellectual disposition and autonomy, while exposure to work alone is associated with a tendency toward regression on these two personality dimensions" (Trent and Craise 1967, p. 45).

Flacks (1967, p. 57) argues that activists possess a high distrust of "conventional institutionalized roles. . . . This is most importantly expressed in the almost universal desire among the highly involved to avoid institutionalized careers. Our data suggest that few student activists look toward careers in the professions, the sciences, industry, or politics." In an unpublished paper, Derber and Flacks (1967) have investigated the links between student activists and their families, and find that they originate in what they label "humanist" families, characterized by values such as romanticism and intellectualism, quite at variance with both the dominant culture and families in the mainstream of the American upper middle class. Thus "our view is that children raised in humanistic families are potential recruits to a wide variety of 'deviant' student subcultures, the student movement being one such subculture. Others include intellectual and artistic subcultures and 'bohemian' and 'drug' subcultures. The actual choice that a student makes among these subcultures depends upon a number of situational factors, e.g. the college which he attends, the friends he first meets in college . . . etc." (Derber and Flacks 1967, p. 10).

Derber and Flacks (1967, p. 54) further state that "one important fact about the current student movement is that its core consists of youth who are searching for an alternative to established middle-class values." This line of argument rules out generational conflict between "humanistic" parents and their activist children. Furthermore, Derber and Flacks believe that the number of "humanist" families is increasing, although they do not say why. Keniston (1967a, p. 111) supplements this line of argument by distinguishing between the dissenters who are alienated and those who are activist, a continuum that runs between these two ideal-types, although the dissenters share roughly the same backgrounds. The alienated who "bug

out" are psychologically disturbed due to the interpersonal dynamics of their families, influenced by the pace of social change (Keniston 1967b).

The second important category identifies the student movement as yet another American social protest movement, which is doomed to failure. This is persuasively argued by Lipset and Altbach (1967). It is bound to fail because, as Lipset has persistently argued, the basic leftward thrust of American society, with its liberal ideology, makes it difficult for movements to innovate unless they find themselves so far to the left that their impact is thereby lessened. This is presumably the path that he sees student activism taking. To Flacks the dominant American culture is conservative, whereas to Lipset it is liberal. Lipset and Altbach also point to important organizational differences between universities which account for differential recruitment into the ranks of student protesters.

The third important category is the notion of generational conflict. This has confused some investigators. Derber and Flacks argue that activists are not involved in generational conflict because their orientation flows from their families of origin. But a generational explanation does not depend on student activists reacting to their own families—quite the reverse. The theory, as advanced by Feuer (1967) to explain the New Left, argues that activists choose issues and enemies which function to enable them to channel hostility toward older generations in general, rather than families in particular, whether these be older radical groups, university administrations, or governments.

To reject consideration of generational explanations is to ignore one of the most fundamental of sociological variables, that of age. What is particularly significant about generational explanations is that, in advanced industrial societies, adolescence lasts longer. Thus generational criteria become ambiguous.[2] Accordingly, graduate students and even faculty members can still be defined as adolescents and certainly as members of the rebelling generation. It is possible to consider balding ideologues as members too, especially in the United States (Berger 1960, p. 13). Furthermore, to quote Heberle (1951, p. 125), "the differentiations between generations are likely to be greater in periods of rapid social change than in periods of slow and gradual change." As far as higher education is concerned, the university systems of advanced industrial societies have been in a state of rapid change since the end of World War II.

We do not disagree with the microsociological findings concerning the correlates or the structural factors in student activism. But with the exception of the social movement and generational theories, as presented by Lipset and Altbach and by Feuer, microsociological findings do not even hint that the nature of student activism is connected with the political system. Explanations for political behavior are therefore being offered within the limits of the student culture or subsystem itself, and without any comparative perspective. Both of these deficiencies are surprising because the study of student political behavior in the new nations has been both con-

[2] Cain refers to this as "age status asynchronization" (1964, p. 288).

cerned with the relationship of students to the political system and with international comparisons.

The approaches to student politics discussed above have a common focus, which has, however, not been sufficiently articulated.[3] They are concerned to account for the emergence, determinants, and characteristics of *noninstitutionalized* forms of student politics. Such phenomena share with other noninstitutionalized, collective behavior, the attempt to reconstitute the social order, in terms of a generalized belief which identifies and characterizes some source of social strain and proposes a solution to this strain (Smelser 1962, pp. 1–22, passim). Thus, students protesting at Columbia University perceived serious contradictions or strains in the relationships of the university to society, in its role as property owner of adjacent ghetto neighborhoods, and its participation in the nation's war effort through the Institute of Defense Analysis. Analysis by student activists expressed the generalized belief that these relationships were evil and should be altered or terminated, and that confrontation through student occupation of university buildings would force a reconsideration and modification of these relationships, leading to a more constructive role for the university in its environing neighborhood and in the larger society. For our purposes, the important feature of such student political activity is that it bypasses existing institutionalized arrangements for aggregating and articulating student interests. But we will argue that the form, persistence, and consequences of such issue-oriented protest movements are significantly affected by the existing structural relations between the university and the state and between student politics and the environing political system, at both the local and national levels. An understanding of these effects requires prior analysis of the relationship between these structural arrangements and *institutionalized* forms of student politics, such as student government or the student political party. Our strategy, then, will be to indicate how variations in the indicated structural arrangements are related to variations in the forms of institutionalized student politics. Following this analysis, we will seek to show the consequences of these relationships between formal structures and institutionalized student politics for noninstitutionalized student politics.

Our intention is to suggest:

1. The degree and type of student political behavior can be illuminated by emphasizing the relationships among the characteristics of the political system of a society, the student politics of that society, and the system of higher education. Comparatively, student political behavior will differ according to formal and cultural differences between political systems.

2. The degree and type of student political behavior will consequently be greatly influenced by the *linkages* between the political system and the subsystem of student politics and the system of higher education.

Thus what has been discussed in the literature as student "activism" we regard as a form of noninstitutionalized politics, constrained by the different

[3] Flacks has suggested the possibility that the student movement in the United States may move "toward institutionalization as an expression of youth discontent" (1967, pp. 73–74). See also Newfield (1967, pp. 154–58, passim).

limits which societies place on this category of behavior. Our approach to this category of political behavior emphasizes its relationship to systems and system linkages. The independent variables are the political system and the system linkages, and the dependent variable is student politics, in both its institutionalized and noninstitutionalized forms. The social-psychological correlates of student political behavior and the extent of generational conflict become important intervening variables.

POLITICAL SYSTEMS

If we consider the formal and cultural properties of political systems, we mean such attributes as:

1. The stability and legitimacy of the system of government.
2. The differentiation of the political system.
3. Whether the political system is federal or nonfederal.
4. The forms of party organization within the political system.
5. Whether the political system is a two or multiparty system.
6. The degree of elitism in political decision making.
7. Unique cultural/political values.
8. Where the political system falls along a continuum from democracy to totalitarianism.
9. The structure of the political system in terms of the division of powers among the executive, legislative, and judicial parts of the system.

SYSTEM LINKAGES

We would argue that the most important system linkages between both student political behavior and the system of higher education are:

1. The financial structure of university education in relation to the government or governments of a society, both as regards students and the indirect funding of their education.
2. The degree of political freedom allowed to students.
3. The autonomy of universities in their degree of freedom from political interference.
4. The extent to which a career in student politics involves the expectation and the anticipatory socialization for a career in the political system itself.

THE ORGANIZATION OF INSTITUTIONALIZED STUDENT POLITICS

We argue that the social organization of student politics can be broken down, or collapsed, into the following:

1. National student unions, which aggregate student interests right up to the level of negotiations with governments on basic issues, such as scholarships, provision of residential facilities, etc.
2. Student political clubs or branches of national political parties, including minority parties, such as the Communist party in Western countries.
3. Factional politics, in which student branches of national political parties compete for student support in the struggle to control university government as well as to influence national politics.
4. University student governments, whose focus is intramural and specific to a particular institution of higher education.

KEY SYSTEM LINKAGES: THEIR RELATIONSHIP TO STUDENT POLITICS

We will emphasize two system linkages as crucial here, since they appear to be of fundamental importance in generating the prevailing forms of student

politics under various conditions. These are the process of political career recruitment as this relates to the university, and the degree of centralization of government control over university financing.

We initially came to this typology through an emphasis on the notion of the *political career*. The political career is a system linkage mechanism and, we consider, one of the most important. Yet it is extraordinary how much it has been neglected. We came to it by our reading of Cloward and Ohlin's *Delinquency and Opportunity* (1960). To put their argument in simple terms, they state that there are three kinds of delinquent subcultures: the criminal, the conflict, and the retreatist. The first involves an integration of age levels and values between the adult and adolescent world, the visibility of role models, and an available career within criminal organizations. The links to organized crime are not available to members of conflict and retreatist gangs. It is tempting to transpose their entire typology into the concept of a student political career for its explanatory value. Thus the professional student politician (as in England) finds an integration between his world and that of adult politicians, that is, a ladder of mobility. In the United States this does not occur, so that student activists tend to be conflict oriented while the alienated are the retreatists.

The availability of political careers to students is a function of the character of the political party system and its relationship to higher education. Where political parties are highly organized and centralized at the national level, and are thus able to sponsor mobility into professional political careers, they are likely to turn to universities as sources of able, well-educated candidates. This in turn leads to the development of student political clubs or branches of national political parties on university campuses, where aspiring politicos may become socialized and prove their mettle to party recruiting agents. Where parties are relatively decentralized and loosely organized, the structural conditions for sponsored mobility within universities are weak. Thus, political clubs or party branches as recruiting centers are likely to be absent or poorly developed. Student political clubs thus link student politics to the political system through the medium of individual careers.

The second system linkage concerns the interests of students as a "class," at least in the sense of sharing a common concern for the character of their education and its outcomes. This is significantly determined by the relationship of government to the financing and control of higher education. Where a government agency channels all or most of the funds to finance higher education, and where the same agency plays an important role in instituting new universities, courses of study, examination procedures, and the like, this centralization of authority is likely to have its counterpart in a strong, centralized organization of students at the national level—the national student union.

Where neither of these features appears—centralized party organizations able to recruit party careerists through sponsorship of promising student aspirants, or the centralization of financing and structuring of higher education by government—the salient form of institutionalized student

politics is likely to be university student government. Under these conditions, the concerns of students as a class become decentralized, largely focused upon student concerns for managing that part of their lives for which the individual university allocates authority to student representatives, such as housing, athletics, and other extracurricular concerns. Students may seek to extend their authority into the arena of academic and administrative decision making, but in either case this is likely to take the form of relatively disconnected activities of student governments on individual campuses. Recruitment to student government leadership roles may have a latent recruitment function, but this is more likely to lead initially to careers in the economic than the political system, since an important function of student governments is the management of large sums of money and numerous employees within student union establishments.

Where both of these conditions obtain—centralization of political leadership recruitment, and government financing and structural control of universities—we may expect the existence of both national student unions and political clubs or party branches. This implies the merging of the political recruitment process with that of the process of aggregating and articulating student class interests. Under these conditions, we might expect to find the campaigns for office in national student unions conducted by the student branches of national political parties. Thus, aspirants to political careers may learn political skills and demonstrate political competence through leadership in university government and in national student unions. The latter two organizations are likely to be closely linked under these conditions, and national student union executives are likely to be chosen from experienced officeholders in university student government.

But the juxtaposition of both of these structural links is likely to have a further, qualitative consequence for the form of student politics. The linking of student class interests through student political party branches is likely to generate and sustain a strong concern among students for influence in the national political arena, and this is liable to be reciprocated by the public and by political party leaders, who watch the outcomes of student campaigns as an indication of the present political sentiments of future elites. Thus we would expect the emergence of student political factions under conditions of intense competition for support, influence, and career benefits.

Nothing in the above discussion is meant to suggest that all four types of student politics may not coexist within any one system. Rather, we are emphasizing the long-term persistence of these various types under relatively sustained conditions. In fact, we might go so far as to assert that the recent and present outburst of student revolts, or noninstitutionalized forms of student politics, while highly significant in themselves, will most probably give rise to persisting student movements under the conditions discussed immediately above, but will diminish, if not "wither away," where one or both of these conditions are absent.

Table 1 presents a schematic version of the major determinants of the forms of institutionalized student politics and their outcomes for the *predominant* and *persisting* forms within national political educational systems.

The following discussion provides an application of the typology to concrete cases.

UNIVERSITY STUDENT GOVERNMENT

In a decentralized political system such as the United States, which is federal, highly democratic, and in which the division of powers involves the constitutional development of a strong executive, the system linkages involve a decentralized funding of higher education, political interference with university autonomy, and no expectation that a career in student politics leads to a career within the political system itself.

Consequently, national student unions are nonexistent or weak, as are student branches of the national political parties. The former are weak

TABLE 1

INSTITUTIONALIZED FORMS OF STUDENT POLITICS

RECRUITMENT TO POLITICAL CAREERS THROUGH PARTY SPONSORSHIP OF UNIVERSITY STUDENT ASPIRANTS	GOVERNMENT CONTROL OVER UNIVERSITY STRUCTURE AND FINANCING	
	Strong	Weak
High..........................	Factional competition among political party branches	Political party branches, clubs
Low..........................	National student unions	University student government

because there is no centralized authority entrusted with national control of higher education with which to bargain. The latter are weak because recruitment to political careers is not tied to high visibility of performance in student branches of national political parties. The antipathy to elitism as a political system attribute would militate against such recruitment. A most important consequence is that, before undergraduates seriously consider a political career, they are older than some of their peers in other countries, and they often develop political ambitions as graduate students in law schools or at certain levels within business organizations. Indeed, constitutionally, there is an age limit below which a politician may not enter the Senate. The comparative elderliness of politicians thus provides fuel for generational conflicts by contrast to the youth of undergraduates.[4]

The important types of student political organizations, therefore, are university student governments, which negotiate with administrations over basic student facilities and are generally nonpolitical. University student governments may emulate the tactics of issue movements, but there seems to be a structural obstacle preventing the progression to extremism. This

[4] Recruitment to political candidacy in the United States for local, state, and national offices is essentially a process under local control (see Herbert Jacob 1962; Lester G. Seligman 1961; Seymour M. Lipset 1963, p. 362; Heinz Eulau et al. 1961; and Dwaine Marvick and Charles R. Nixon 1961).

obstacle may be that student governments are constantly involved in nego-
tiation with administrations, and threaten to use extremist tactics only
when crises arise, not within the country but within the restricted locale of
the campus. Members of student governments probably do not maintain
informal or even formal social contact with ideological groups, who often
regard them as having been co-opted by the administration. Issue move-
ments tend to become involved with campus affairs only when their behav-
ior, externally oriented, runs up against administration hostility. When
campus matters and crises, such as the plight of the Negroes in the urban
ghetto, converge, then issue movements take the university administration
as their target. Student politics are then caught in the inevitable progression
to extremism, as occurred at Columbia, where the university's relationship
with Harlem was a focal point of the disturbances.

We cannot cite evidence for this, although it probably exists—that
members of university student governments in the United States are ex-
periencing anticipatory socialization for adult political careers.[5] The rela-
tionships of student representatives to the university president is analogous
to the role of state or national legislators in their relations to their respective
executives. It would be interesting to know how many of these men were
prominent in university student government, went on to careers in law or
business, and then entered adult political careers.

NATIONAL STUDENT UNION

France and Great Britain offer a different combination of variables in the
typology. In France, the political system is unstable, nonfederal, and elitist,
with frequent intervals of antidemocratic paternalist government. The civil
service is particularly elitist and difficult to enter. There is a multiparty
system. The universities are totally dependent on governmental subsidy,
and decisions on higher education are highly centralized in the government
and its civil service.[6] As in the United States, recruitment to political
candidacy is a locally controlled process. French legislators are often
elected on the basis of holding a local office, which they retain while holding
their national office (La Ponce 1961, p. 234; MacRae 1967, p. 54, table 35).[7]

The result is a powerful national student union, the Union nationale des
étudiants française (UNEF), which indulges in what amounts to collective

[5] Studies dealing with the political socialization of state and national legislators in the
United States suggest that involvement in school politics or student government plays
a relatively minor role (see Allan Kornberg and Norman Thomas 1965; and Heinz
Eulau et al. 1959, p. 308).

[6] For the historical circumstances leading to this situation, see Theodore Zeldin (1967),
and, for the present structure, see F. Ridley (1963).

[7] On the other hand, "the university has been, for a long time, the most important nursery
of political men," according to Mattei Doggan (1961, pp. 77–79). His evidence suggests
that the university has a politicizing effect, imparting political skills, but does not reveal
the link between student political party branches and political careers we find for England
and Latin American countries. Jean-Pierre Worms states that student political leader-
ship is not linked to adult political careers in France (personal communication).

bargaining with the government over matters affecting students (Fields 1967; Pinner 1964, 1968; Worms 1967). The results of a breakdown in bargaining are analagous to what happens in the economy—strikes and sharp industrial strife, which is often very violent when student demands are frustrated. But French students are from upper-socioeconomic groups, when compared with the social composition of university students from other advanced industrial societies, as table 2 demonstrates.

The consequence is that the UNEF is strong and stable, except when frustrated, as, for instance, by the contemporary central governmental allocation of resources to the *force de frappe* and the neglect of higher education. Why, then, does the UNEF occasionally become wracked by internal political dissension and transformed into an issue movement? The answer seems to be historic, that is, cultural and structural. Historically, the national student union has failed to take a political stand, especially in avoiding alliance with the resistance to German occupation during World War II.

TABLE 2

PERCENTAGE OF UNIVERSITY STUDENTS FROM
WORKING-CLASS FAMILIES

Country	Year	%
United States	Early 1950s	31.0
Great Britain	1961–62	25.0
Norway	1961	25.0
Austria	1958–59	8.0
France	1961–62	5.5

SOURCE.—A. Belden Fields 1967, p. 30.

This was in line with its limited goals. But a group within it, the *minoritaires*, began to function as an issue movement, as during the Algerian war and against Gaullist policies. They are resisted by the *majoritaires*. But structurally, because of the centralization of government control over higher education and the consequent importance of the UNEF, the *minoritaires* desire to radicalize the UNEF rather than operate as a minority group outside of it. Tactically this is most effective because the government and the *majoritaires* cannot ignore them, due to the system of collective bargaining.

The *minoritaires* are often *narodnik* in orientation but are not welcomed by the labor unions, who perceive them as members of the *haute bougeoisie*. They turn inward, to theoretical abstraction, to Marxism, and to the consistent attempt to radicalize the UNEF. This rarely succeeds, so the French student movement is not a movement at all. It is a formal organization, recognized by the government with which it negotiates, which spasmodically endures the pressure of issues brought up by the *minoritaires*, before it resumes its normal existence as a national student union. The *minoritaires* use its salience to bring specific and general issues before the society. The great recent success of the militants was based on the fact that student mat-

ters, usually negotiable, were given low priority by the regime because of investment in policies which the *minoritaires* rejected. The confluence of student dissatisfaction and anti-Gaullism has for a time allowed the national student union to draw upon that dissatisfaction and to bring both that and Gaullist policies before the nation in a dramatic fashion.

POLITICAL PARTY BRANCHES

Britain has a stable and legitimate system of government, which is non-federal and elitist. There are strong and permanent party organizations (in contrast to the United States), built around parties, rather than men, which exist and function between elections. In terms of the system linkages, all universities are centrally funded by a body composed of senior civil servants and the heads of universities—the University Grants Committee. The result is that the universities have virtual autonomy in their financial affairs despite central funding (Bowen 1964). Students are allowed considerable political freedom; and, perhaps in this society more than in any other, a career in student politics involves the expectation and the anticipatory socialization for a career in the political system itself. This develops from a unique situation in which Oxford and Cambridge provide the great majority of members of Parliament. This used to be less true of the Labour party, but the large proportion of the sons of manual workers at even these universities—in Oxford at least 70 percent of the student body is subsidized by scholarships and loans—means that the Labour party too has been recruiting Oxonians and Cantabrigians in large numbers since the war, in preference to older labor union leaders and party workers (Ranney 1965, p. 202, table 7.5; Rose 1964, p. 72; Guttsman 1965, pp. 156–58). The University of London, despite its size and position in the metropolis, is badly represented and has been a training ground for the leaders of new nations rather than for the top political positions in the mother country.[8] The Conservative party is predominantly drawn from the public schools (i.e., prep), especially from Eton and Harrow as well as from Oxford and Cambridge. In these schools, political sentiments are overwhelmingly Conservative (Weinberg 1967, p. 118, table 12).

The unique position of Oxford and Cambridge may reflect a cultural value of the political system. But the combination of political system attributes and system linkages means that students may enter these universities with the intention of making politics a career. The form of student political organization which results is the student political club affiliated with national political parties. The latter use the clubs as recruiting grounds for future members of Parliament as well as for the party organization. There is intense competition for high office in these clubs, especially between their respective right and left wings. Both face each other in the Oxford and Cambridge Unions, which are modeled on the House of Commons. Political activists tend toward careers in law, journalism, television, and

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[8] Edward Shils (1960, p. 337) writes that "the London School of Economics in particular has probably contributed much more to the excitation of nationalistic sentiment than any other educational institution in the world."

college teaching, to wait for their opportunity to enter the House of Commons. The intensity of system linkage tends to result in the socialization of both Labourites and Conservatives toward the political center, for specific issues are hammered out within and between the political clubs.

This situation weakens the spontaneous appearance of protest movements—such as the Campaign for Nuclear Disarmament—which are forced to filter their policies through the clubs, which function as a damper on the progression. toward extremism. The National Union of Students is also weakened because of the interaction of political system attributes and system linkages and is mainly a service organization for students in terms of arranging vacation trips abroad, etc. The National Union of Students cannot gain support at Oxford and Cambridge and, unlike its French equivalent, does not bargain with the government, due to the decentralization of funding. The social organization of students may now be changing. In 1967, a Radical Student Alliance (RSA) was founded, bringing together activists concerned with specific issues and students dissatisfied with more direct governmental control and with facilities at the new universities (Halsey and Marks 1968). In the older universities the RSA is strong at institutions such as Hull and the London School of Economics, where facilities are considered poor and overcrowding is common. We may predict that, if the combination of political system attributes and system linkages is altering, then a politicized national student union may emerge, but, as yet, it is too early to judge. But this demonstrates that a change in an element of the typology can forewarn of a change in the social organization of student politics.

FACTIONAL COMPETITION AMONG POLITICAL PARTY BRANCHES

Latin America will be treated here as a single case, despite the variations among the twenty-some nations. But our generalizations will be based primarily on those nations which have attained moderate to high levels of economic and political development, such as Chile, Argentina, Uruguay, Peru, Venezuela, Colombia, Brazil, Costa Rica, Panama, Mexico, and Cuba. As political systems, these societies are frequently interrupted formal democracies, characterized by highly centralized executive authority of relatively weak legitimacy. In contrast to the other societies discussed heretofore, the institutions of the church and the military have played inordinately important political roles both in influence and in actual political leadership. This statement applies least to Chile, Uruguay, Costa Rica, and Mexico. Party systems vary from one-party dominant systems, as in Mexico, to multiparty systems, as in Argentina.

With respect to system linkages to higher education, the central government provides the predominant source of funds (Scherz-Garcia 1967). Formally autonomous, the universities have experienced frequent interventions into their internal affairs by various governments, especially during dictatorial regimes which have suspended autonomy and have not respected the norm of the inviolability of the university. The universities face serious problems due to inadequate financing, which results in poor libraries, in-

sufficient research facilities and study space, part-time professors, inadequate housing accommodations, overcrowded lecture halls, and a host of other difficulties (Scott 1968).

Most universities are highly politicized due to a combination of attributes. The most important is perhaps that student political leadership has often led more or less directly to political careers, either through recruitment of activists into political careers or the organization of new parties among university students which become important national parties, some of them coming to power through the electoral process or by means of a coup or revolution (Martz 1966, pp. 17–48; Alexander 1965, pp. 120–26; Dix 1967, pp. 345–46; Walters 1968, p. 198; Canton 1966, pp. 96–97). Political connections are highly relevant to career success in nonpolitical careers as well, constituting a further impetus to political activity. The consequence is that, in most of these societies, university branches of national parties play an important role in university affairs, seeking to win university elections and often gaining direct support from their parent parties, who perceive university students as important constituents and as a significant source of future leadership (Patch 1961).

Government control of university financing and the structure of higher education has its counterpart in strong university student organizations at the university and national level, in the form of national student unions and their university affiliates (Bonilla 1959, 1960; Walters 1968). The importance of these for organizing student opposition is recognized by dictatorships, which often abrogate them on coming to power. In societies dominated by elites, as these are, students are often the only group in society capable of and willing to express the interests of the "inarticulate masses." This adds to their national prestige and to their threat to unrepresentative governments (Silvert 1964).

The phenomena of political party branches and national student unions are closely related to the Latin American student movement. The University Reform movement is dated from 1918 in Argentina, where its most significant successes were achieved, but limited agitation for university reform occurred earlier in other Latin American countries. The major significance of this movement from our perspective is that it institutionalized "co-gobierno," or the concept of direct participation in university government by student and faculty representatives. This has meant that, where the movement was successful, which it was to a greater or lesser degree in most of the Latin American republics, student representatives run for positions on both university and school or faculty decision-making bodies. In Argentina, the Reforma Universitaria party, including most political groups on the left and some of the center, won most elections for the governing council of the university until recently (Walters 1968, pp. 168–72). Elsewhere, students run for office under the banner of national political parties, as in Peru, Chile, Colombia, and Venezuela. When new movements or parties have emerged, these have tended to be incorporated into the university political subcultures, presenting slates of candidates and seeking to dominate university government as their counterparts seek to dominate the national government.

IMPLICATIONS OF THE TYPOLOGY FOR NONINSTITUTIONALIZED
STUDENT POLITICS

We will now consider the implications of the typology for noninstitutional-
ized student politics. While we cannot attempt to account for the emergence,
frequency, or intensity of student protest in terms of our scheme of analysis,
we can suggest some aspects of the form, persistence, and direction which
student protests are likely to take under the differing conditions set forth in
the typology. Our focus here is on those forms of student politics which
utilize means outside those available in the various institutionalized forms
discussed above, and which seek goals beyond those delimited by the exist-
ing arrangements for expressing student interests. Our major concern will
be to suggest the extent to which various forms of noninstitutionalized stu-
dent activism are likely to be incorporated with, or otherwise linked to, in-
institutionalized forms of activism, perhaps modifying the latter in the
process of adaptation.

We have touched briefly on the fate of protest movements in the French
and British cases; thus we will concentrate on the American and Latin
American cases in the following discussion. These provide, in terms of our
typology, the situations in which our two major variables are weak and
absent, in the American case, and strong and present, in the Latin American
case. As a general hypothesis, we would argue that, in the former, student
protest is least likely to become incorporated into the stream of national
politics and to affect institutionalized forms of student politics, due to the
weakness of structural links between university student and national poli-
tics. In the latter case, because of strong structural links between university
student and national politics, noninstitutionalized protest is most likely to
affect national politics and to become institutionalized, in the form of new
student political groups or branches of new national parties, joining the
competition for student votes and national influence. Some support for this
hypothesis is offered below.

NONINSTITUTIONALIZED STUDENT POLITICS IN THE
UNITED STATES

In American universities, recruits to protest movements are brought to-
gether in the better universities due to their high grade-point average, their
intellectual and aesthetic orientations derived from their families of origin,
and their political awareness. As Flacks (1967, p. 57) says, they have no
interest in political careers as such. Any national crisis will cause this con-
catenation of a politically active minority, but, given the structure of the
political system, and its specific combination of attributes, their actual
political behavior will tend toward the noninstitutionalized forms of pro-
test. They may resort to ideological abstraction and various forms of civil
disobedience from violence to nonviolence. The comparative elderliness of
politicians in the political system intensifies their generational hostility, and
they look for allies, not within the political system itself, but among the
downtrodden groups in society, which leads to a *narodnik* orientation, or

among similar groups at other universities, which results in a quasi-Leninist form of elitism.

In short, they are caught in the inevitable push toward extremism because they are not constrained by the limits of the political system, due to the absence of links to political careers and the high degree of freedom that the political system allows to students. The progression toward extremism results in the fractionation into ideological groups, which come to argue among themselves at the most abstract levels, but whose social base is limited by the fact that some students do not wish to go as far, or resist the trend toward extreme positions. Thus fractionation results in the proliferation of small and quite varied groups. The latent function of Trotskyists fighting Maoists or Leninists is to ensure the relative powerlessness of American student movements. When they become linked to national crises, such as the problems of Negroes or the war in Vietnam, and work with their generational elders within the political system, the progression toward extremism is halted, and their impact on the political system can be considerable. But immersed in their undergraduate student political subculture, these groups are insulated from the political system (Lipset and Altbach 1967).

Their members define their futures outside of the political system by rejecting careers in law and business, which would give them the opportunity to enter conventional politics at a later date. A societal factor has its influence here as well. Because the media in America are defined as businesses, they do not tend to attract intellectuals. Those who enter the media become professionalized, so that careers in the television or newspaper industry do not provide the waiting period for later entrance into a political career for the former members of issue movements. As these members tend to congregate at the better universities and to be above-average students, imbued with the value of intellectualism, a proportion may take up careers within the academy itself. This provides the ranks of graduate students in the arts and sciences with politically active recruits, and eventually, the professoriate itself. It is partly for this reason that the American intelligentsia is oriented toward the university, for it provides a career and security, yet its latent function is to further insulate the former members of issue movements from the political system. Role conflict often develops between the expected professionalism of the academic and his political interests, especially if his professional expertise is sought by legislators and others operating within a political system to which he has fundamental objections.[9]

NONINSTITUTIONALIZED STUDENT POLITICS IN LATIN AMERICA

At present there is an absence of data for Latin America directly comparable to those available for American students, to distinguish between the "activist" and "nonactivist" student. The data that exist suggest that activist students are more likely to attend large national universities located in national capitols, to come from religiously less devout, lower-middle-class families, which are more likely to support parties of the center or left, rather than the right.

[9] For example, see Harry S. Hall (1956).

In terms of career orientations and fields of study, they are more likely to be enrolled in the humanities, law, or social sciences than in other professional fields such as engineering or medicine (Lipset 1967, 1968; Silvert 1964: Hennessy 1967; Walker 1968; Glazer 1968). But while the analysis of the characteristics of the activist student in North America is essentially focused on those who are involved in noninstitutionalized forms of student politics, the boundary between these and institutionalized forms, and between students engaged in the one or the other, is less sharp in Latin America. Highly institutionalized student organizations frequently engage in protest marches which erupt in violence, when police or counterdemonstrators seek to thwart their attempts to influence the populace and the government (Bonilla 1959, pp. 229–30, passim; Walters 1968, pp. 160–65, passim). The most radical student groups, such as Communists, Fidelistas, and others frequently win university elections as legitimate student parties for seats on university governing councils. The goals of leftist as well as centrist and conservative student groups are likely to be similarly diffuse—the attempt to influence university decisions, through direct participation in "co-gobierno," to influence the trend of national politics through confrontation with police in street demonstrations or through consultation with government leaders, and, for some student leaders, to fashion political careers for themselves by demonstrating their organizational and oratorical skills before an audience of interested political professionals.

In contrast to the American situation, the political activist is much more likely to be interested in a political career, either as a full-time professional politician or else as a publicist or otherwise engaged intellectual, who often combines a career as university lecturer, practitioner of a profession, and commentator upon and activist in political life. This suggests the lower degree of differentiation in Latin American professional life in contrast to that of North America and, to some extent, Europe. Thus, the Latin American activist is likely to find a more open environment for the practice of politics following graduation, and is thus less likely to eschew a political career as an aspect of his commitment to student political activity (Ellison 1964; Gillin 1960, p. 42; Goldrich 1966, p. 117, Table B-2; Walters 1968, p. 12).

These features of Latin American political life, both within the university and in the environing society suggest that political activity may be easily integrated with other professional commitments, perhaps in part because the latter are likely to be weaker, but also because the structural links between university and government and between student and "adult" political careers are more closely integrated. The limiting case would include those students for whom none of the legitimate parties appears to offer a solution to their ideological commitments, and who choose to join a revolutionary guerilla movement, as have some students in Venezuela, Colombia, Peru, and even Argentina (Petras 1968; Harding 1968, pp. 25–27). But the success of university student-founded political parties like the Accion Democratica in Venezuela, which developed as a revolutionary movement but became an institutionalized, governing party after the overthrow of Perez

Jimenez, and the success of the 26th of July Movement in Cuba, in which students participated and were rewarded with positions in the revolutionary government, suggest that even those who choose the alternative of violent opposition are not foregoing political careers but, rather, are seeking them by other, if more risky, means.

To conclude, what is often referred to as *the* Latin American student movement tends to be an amalgam of relatively stable parties and ideological tendencies and groups, supported by a well-structured political subsystem linking universities and the national and international political environment, acting through participation in university government and more expressive activities such as demonstrations directed at the national government, opposing "imperialism," or supporting workers or fellow students and co-believers elsewhere. The movement is frequently regenerated by coups which abolish its formal structure and stimulate the formation of opposition movements to restore the time-honored principles of university reform, or by new political groups or protest movements which seek to further radicalize the movement, on the model of the Cuban Revolution or the Vietnam war for liberation. Thus new movements tend to be added to the existing political tradition and structure in the form of a modification of the ideological stream and new parties or political groups seeking political power which look to the universities for recruits and general support (Spencer 1965*a*, 1963*b;* Walker 1967). In contrast, student political movements in the other three situations defined by our typology tend to diminish and eventually die out, since they lack strong university student government, national student unions, or party-recruitment channels to which they could link themselves. Typically, such movements are essentially generational phenomena, and disappear often in a radically short time, as supporters of the movement graduate and move into nonpolitical careers.

CONCLUSIONS

We have attempted to provide a framework for the comparative analysis of institutionalized student politics by emphasizing the links between the larger political environment and the university political setting. This approach helps to account for the persistence of predominant forms of student political activity in various national settings. Further, by defining the characteristics and boundaries of such institutionalized forms, we are able to account for some characteristics of noninstitutionalized student politics in these different settings.

One major hypothesis which our analysis suggests is that, where the institutionalized forms of student politics are closely linked to university government and adult political career recruitment, as in Latin America, student demands for major changes in society are more easily incorporated and expressed within the existing, "legitimate" student organizations, as part of their institutionalized roles. In the United States, and to some extent in Britain, demands for major societal change are of necessity beyond the purview of the localized and relatively insular university student politi-

cal organizations. This means that student protesters in the latter settings tend to recruit those without specific political career goals, and seek to create novel, ad hoc organizations to carry out their activities. The lack of structural links to university student government or to national political parties of such organizations weakens their impact and fails to constrain their tendencies toward extremism. In the Latin American and, to some extent, in the French cases, the stronger structural linkages between university and/or national politics provide a stronger basis for the organization of protest, and increase the probability of the protest movement's partial success, or else its incorporation into and thus ideological moderation by existing political organizations.

REFERENCES

Alexander, Robert J. 1965. *Latin American Politics and Government*. New York: Harper & Row.
Berger, Bennett M. 1960. "How Long Is a Generation?" *British Journal of Sociology* 11:10–23.
Bonilla, Frank. 1959. "Students in Politics: Three Generations of Political Action in a Latin American University." Ph.D. dissertation, Harvard University.
———. 1960. "The Student Federation of Chile: Fifty Years of Political Action." *Journal of Inter-American Studies* 2:311–34.
Bowen, William G. 1964. *Economic Aspects of Education*. Princeton, N.J.: Industrial Relations Section, Princeton University.
Cain, Leonard D., Jr. 1964. "Life Course and Social Structure." In *Handbook of Modern Sociology*, edited by Robert E. L. Faris. Chicago: Rand McNally.
Canton, Dario. 1966. *El Parlamento Argentino en epocas de cambio: 1890, 1916 y 1946*. Buenos Aires: Editorial del Instituto Torcuato Di Tella.
Cloward, Richard A., and Lloyd E. Ohlin. 1960. *Delinquency and Opportunity: A Theory of Delinquent Gangs*. New York: Free Press.
Derber, Charles, and Richard Flacks. 1967. "An Exploration of Radical Student Activists and Their Parents." Paper delivered at the annual meetings of the American Sociological Assn., San Francisco, August 28–31. Mimeographed.
Dix, Robert H. 1967. *Columbia: The Political Dimensions of Change*. New York: Yale University Press.
Doggan, Mattei. 1961. "Political Ascent in a Class Society: French Deputies, 1870–1958." In *Political Decision-Makers*, edited by Dwaine Marvick. Glencoe, Ill.: Free Press.
Ellison, Fred P. 1964. "The Writer." In *Continuity and Change in Latin America*, edited by John J. Johnson. Stanford, Calif.: Stanford University Press.
Eulau, Heinz, et al. 1959. "The Political Socialization of American State Legislators." In *Legislative Behavior*, edited by John C. Wahlke and Heinz Eulau. Glencoe, Ill.: Free Press.
———. 1961. "Career Perspectives of American State Legislators." In *Political Decision-Makers*, edited by Dwaine Marvick. Glencoe, Ill.: Free Press.
Feuer, Lewis S. 1967. "The Student Left in the U.S.A.," *Survey* 62 (January):90–103.
Fields, A. Belden. 1967. "The French Student Union." Paper presented at Conference on Students and Politics, San Juan, March 27–31. Mimeographed.
Flacks, Richard. 1967. "The Liberated Generation: An Exploration of the Roots of Student Protest." *Journal of Social Issues* 23 (July):52–75.
Gillin, John P. 1960. "Some Signposts for Policy." In *Social Change in Latin America Today*, edited by Richard Adams et al. New York: Vintage Books.
Glazer, Myron. 1968. "Student Politics in a Chilean University." *Daedalus* 97 (Winter): 99–115.

Goldrich, Daniel. 1966. *Sons of the Establishment*. Chicago: Rand McNally.

Guttsman, W. L. 1965. *The British Political Elite*. London: MacGibbon & Kee.

Hall, Harry S. 1956. "Scientists and Politicians." *Bulletin of the Atomic Scientists* 12 (February):46–52. Reprinted in *Professionalization*, edited by Howard M. Vollmer and Donald L. Mills. 1966. Englewood Cliffs, N.J.: Prentice-Hall.

Halsey, A. H., and Steven Marks. 1968. "British Student Politics." *Daedalus* 97 (Winter):116–36.

Harding, Timothy. 1968. *The University, Politics and Development in Contemporary Latin America*. Latin American Research Program, Research Seminar series no. 3. Riverside: University of California.

Heberle, Rudolf. 1951. "The Problem of Political Generations." In *Social Movements*. New York: Appleton-Century-Crofts.

Hennessy, Alistair. 1967. "University Students in National Politics." In *The Politics of Conformity in Latin America*, edited by Claudio Veliz. London: Oxford University Press.

Jacob, Herbert. 1962. "Initial Recruitment of Elected Officials in the U.S.—a Model." *Journal of Politics* 24:703–16.

Keniston, Kenneth. 1967a. "The Sources of Student Dissent." *Journal of Social Issues* 23 (July):108–37.

———. 1967b. *The Uncommitted: Alienated Youth in American Society*. New York: Delta.

Kornberg, Allan, and Norman Thomas. 1965. "The Political Socialization of National Legislative Elites in the United States and Canada." *Journal of Politics* 27:761–75.

La Ponce, J. A. 1961. *The Government of the Fifth French Republic*. Berkeley: University of California Press.

Lipset, Seymour Martin. 1963. *Political Man*. New York: Anchor Books.

———. 1967. "University Students and Politics in Underdeveloped Countries." In *Student Politics*, edited by Seymour Martin Lipset. New York: Basic Books.

———. 1968. "Students and Politics in Comparative Perspective." *Daedalus* 97 (Winter):1–20.

Lipset, Seymour Martin, and Philip G. Altbach. 1967. "Student Politics and Higher Education in the United States." In *Student Politics*, edited by Seymour Martin Lipset. New York: Basic Books.

MacRae, Duncan, Jr. 1967. *Parliament, Parties and Society in France, 1946–1958*. New York: St. Martin's.

Martz, John D. 1966. *Accion Democratica*. Princeton, N.J.: Princeton University Press.

Marvick, Dwaine, and Charles R. Nixon. 1961. "Recruitment Contrasts in Rival Campaign Groups." In *Political Decision-Makers*, edited by Dwaine Marvick. Glencoe, Ill.: Free Press.

Newfield, Jack. 1967. *A Prophetic Minority*. Toronto: New American Library.

Patch, Richard W. 1961. "Fidelismo in Peruvian Universities." *American Universities Field Staff Reports*. West Coast South America Series, vol. 8 (January and February).

Petras, James. 1968. "Revolution and Guerilla Movements in Latin America: Venezuela, Guatemala, Colombia and Peru." In *Latin America: Reform or Revolution?* edited by James Petras and Maurice Zeitlin. Greenwich, Conn.: Fawcett.

Pinner, Frank A. 1964. "Student Trade-Unionism in France, Belgium and Holland: Anticipatory Socialization and Role-seeking." *Sociology of Education* 37 (Spring):1–23.

———. 1968. "Tradition and Transgression: Western European Students in the Postwar World." *Daedalus* 97 (Winter):137–55.

Ranney, Austin. 1965. *Pathways to Parliament*. Madison: University of Wisconsin Press.

Ridley, F. 1963. "The French Educational System: Policy and Administrative Aspects." *Political Studies* 11 (June):178–202.

Rose, Richard. 1964. *Politics in England*. Boston: Little, Brown.

Scherz-Garcia, Luis. 1967. "Relations between Public and Private Universities." In *Elites in Latin America*, edited by Seymour M. Lipset and Aldo Solari. New York: Oxford University Press.

Scott, Robert E. 1968. "Political Activism in Latin America." *Daedalus* 97 (Winter):70–98.

Seligman, Lester G. 1961. "Political Recruitment and Party Structure: A Case Study." *Western Political Quarterly* 55:77–86.

Shils, Edward. 1960. "The Intellectuals in the Political Development of the New States." *World Politics* 12 (April):329–68.

Silvert, Kalman H. 1964. "The University Student." In *Continuity and Change in Latin America*, edited by John J. Johnson. Stanford, Calif.: Stanford University Press.

Smelser, Neil. 1962. *Theory of Collective Behavior*. New York: Free Press.

Spencer, David. 1965a. "The Impact of the Cuban Revolution on Latin American Student Politics." In *Student Politics in Latin America*, edited by David Spencer. United States National Student Assn.

———. 1965b. "The Role of Youth and Student Groups in Latin American Political Parties." In *Student Politics in Latin America*, edited by David Spencer. United States National Student Assn.

Trent, James W., and Judith L. Craise. 1967. "Commitment and Conformity in the American College." *Journal of Social Issues* 23 (July):34–51.

Walker, Kenneth N. 1967. "A Comparison of the University Reform Movements in Argentina and Colombia." In *Student Politics*, edited by Seymour Martin Lipset. New York: Basic Books.

———. 1968. "Family and University Influences on Student Political Orientations." Mimeographed.

Walters, Richard J. 1968. *Student Politics in Argentina*. New York: Basic Books.

Weinberg, Ian. 1967. *The English Public Schools: The Sociology of Elite Education*. New York: Atherton.

Worms, Jean-Pierre. 1967. "The French Student Movement." In *Student Politics*, edited by Seymour Martin Lipset. New York: Basic Books.

Zeldin, Theodore. 1967. "Higher Education in France, 1848–1940." *Journal of Contemporary History* 2 (3):53–80.

The Power and Functions of Boards of Directors:
A Theoretical Synthesis[1]

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Many social scientists have assumed that the boards of directors (governing boards) of corporate organizations control their organizations in name only. Others, examining the relationship of American social and business elites to the operation of welfare organizations and elite social clubs conclude that they are controlled by their boards. This contradiction is resolved by a theoretical analysis of the external "detachable" resources, personal characteristics, and strategic contingency situations conducive to more or less board power vis-à-vis executives. Bases of board power include control of resources and knowledge about organizational operation. Personal characteristics affecting board members power are social status and sex. Strategic contingencies are events of organizational life cycles, such as mergers, major program and goal changes, and selection of chief executives, conducive to the exercise of board power.

Such broad-scale metaphors as "The Managerial Revolution" (Burnham 1941) or "The Power Elite" (Mills 1957) direct our attention to the control of major decisions both at the level of the total society and of large-scale organizations. Although these metaphors and their associated underlying variables lead to hypotheses that may be testable in long historical perspective, they are too gross for short-run analysis. In formulating hypotheses about the control of organizations, for instance, we must specify a range of variables and conditions under which elites or managers may or may not influence important decisions.

Analysis of the functions and conditions of power of boards of directors provides intellectual leverage on this question of the control of organizations. The board of directors of a corporate organization has formal and legal responsibility for controlling and maintaining organizational operation and effectiveness (Lattin 1959, pp. 211–78). The corporate form with its board of directors (governing boards) has been applied to many types of organizations, for example, businesses, voluntary welfare associations, private schools, public school systems, hospitals, and governmental agencies with "autonomous" or independent functions.[2]

[1] This paper was begun during a study of the Young Men's Christian Association of Metropolitan Chicago, supported by a grant (GM-10777) from the Institute of General Medical Sciences, NIH, USPHS. At a later point, a grant from the Vanderbilt University Research Council and a Career Development Award (K-34, 919) NIMH, USPHS, aided in its completion. It is a revised version of a paper delivered at the 1968 Annual Meetings of the American Sociological Association, Boston, Massachusetts. Mark S. Massel, Nicholas Mullins, and James Price gave astringent criticism to earlier versions.

[2] It should be noted that the earliest corporations were religious orders (see Davis 1961).

Yet as the size and scope of organizations have increased, some scholars have doubted whether the formal system of board control does any more than provide lip service to the law. Those who argue that boards of directors are merely a legal and coopted appendage believe organizations are controlled by the full-time managers (Gordon 1945, chaps. 5 and 6). They believe boards are at the mercy of the managers who control information, definitions of alternatives, the nominating process, and, indeed, the very agenda of decision making.[3] On the other hand, some students—especially those looking at welfare organizations and the American stratification system, note that boards have ultimate power to hire and fire executives, which shapes executives' decision premises (Hunter 1963, pp. 231–36; Baltzell 1958, pp. 364–83).[4]

The pervasiveness of the corporate form in America and the disagreement over the importance of boards of directors relates not only to sociological questions but to policy ones as well. Although this essay does not deal directly with policy issues, it is worth noting that questions of the proper and improper activities of boards of directors preoccupy several arms of government.

In this theoretical synthesis of propositions about the power and influence of boards of directors our general orientation is that, in the relationships among boards (as collectivities), individual board members, and executives, each party brings to bear "resources." These resources may be based in legal rights, in monetary control, in knowledge, or even in force of personality and traditions. Resources may be crudely classified as "detachable" resources, personal characteristics, and strategic contingency situations. It is the balance of resources for specific situations and decisions that determines the attribution of relative power in the encounter between boards and executives.

It must be noted that the power of boards of directors or of individual board members does not refer to their formal voting rights. As in so many voting situations, formal voting may be irrelevant to many (though not all) of the crucial decisions. Instead, the power of board members relates to their service on and control of key committees and the extent to which

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[3] "I've been concerned and at the same time both amused and somewhat guilty about the fact that the Board of Directors makes policy decisions, both by authority of the by-laws and in the actual voting they do; yet actually in the present day family casework agency the staff has to "educate" the Board constantly and persistently and it certainly does choose the elements of education which lead toward the conclusions of which the staff approves. In other words, we tell them how to vote and they vote and we call that process 'the Board sets the policies of the agency. . . .' I can frankly cite very few instances when Board opinion has influenced my judgment about policy and practices during the (many) years I have been Executive of this agency, although the Board has made every important policy decision and has been 'informed' ad nauseum before every decision." This is from a letter written by the executive of a family service agency in 1956 (see Wilensky and Lebeaux 1965, p. 273).

[4] Heffernan (1964) shows how social work executives moderate their political activities to keep in the good graces of their boards.

other members and the management (who may also be board members) find it necessary to be bound by their perspectives and ideas.

The corporation form (as we have come to know it) was created as a means of accomplishing "desirable" ends that were beyond the capabilities of individuals. Boards of directors were created and recognized in law in order to insure continuity in the management of organizations and to fix a locus of responsibility for the control of "independent" organizations.[5] Boards are charged with the proper use of resources in pursuit of organizational goals. Directors are not personally responsible for organizational losses, but they are responsible for prudent action in behalf of the "owners" (whomever that might be).

Prudent action includes appointing and perpetuating effective management of the organization and overseeing the work of such management. This control function of the boards of directors is inward looking; the board operates as the agent of the corporation at the request of the owners (members) to oversee organizational activity.[6]

Because of their formal position of responsibility and their involvement in the organization, boards also develop an outward-looking function; they promote and represent the organization to major elements of the organizational set, for example, customers, suppliers, stockholders, interested agencies of the state, and the like. That is, they defend and support the growth, autonomy, and effectiveness of their agencies vis-à-vis the outside world.

Obviously, boards differ in the extent to which they perform either the external representation or internal control functions. For instance, it is likely that boards of prosperous manufacturing firms, in a competitive industry, and with unproblematic governmental relations, have less of an external representation function than welfare agencies heavily dependent on wealthy donors or on the community fund. Similarly, in small organizations in which board members have intimate knowledge, they may decide all nonroutinized expenditures, major personnel changes, markets, and types of product. In other organizations they may be restricted to formal appointment of the executive and the auditor and to setting executive salaries.

Although there is this variety, there are some relatively standard activities in which boards engage and which have implications for their potential power. First, a major concern of boards tends to be personnel. At the very least, boards usually must choose a chief operating officer and decide on his salary (if there is one). Second, boards that are not "paper boards," that actually hold meetings and discuss organizational affairs,

[5] Although much of our discussion is applicable to governmental organizations, most of it is framed in terms of nongovernmental ones. Governing boards and organizations in the "public" sector tend to have less autonomy of organizational operation. Mainly discussing private organization gives our propositions a greater specificity and concreteness.

[6] We usually think of boards of directors as agents of the "owners," but legally they are servants of the corporation vested with corporate control. On the ambiguities here, see Marris (1964, pp. 12–13).

usually review the financial condition of the organization and set financial policy (dividend rates, capital indebtedness, etc.). In some cases the rules and bylaws of the board require formal approval for all nonroutine expenditures over a stipulated amount. Finally, many boards review organizational output, its "product," markets, and comparative operating efficiency. Which of these activities are performed, and to what extent, depends on the structure of the organization, its environmental interrelations, and the sources of board member power vis-à-vis executives.

DETACHABLE RESOURCES A POWER BASE

A resource is "detachable" if it is not closely tied to the person, that is, if it is transferable. Utilizing a cross-sectional approach, we examine gross variables between organizations and between board members causing differences in the relative power of boards and individual board members.

There are two main bases of power considered. First, the relative power of board members can be based on their access to and control of relevant external resources. Second, knowledge relevant to the ongoing operations of the organization may be considered an internal organizational base of power differentially distributed between boards and executives.

EXTERNAL BASES OF POWER

The members of a board of directors may serve largely on the sufferance of the executive or they may "represent" salient blocs of shareholder votes, sources of financial material support, or of community legitimation and representation. In general, *to the extent that board members control or represent salient external "resources," they are more powerful than if they do not control such resources.* (For this and all other propositions, *read* "everything else being equal.")

Stockownership.—Stockownership in a corporation is an external basis of power because it is completely dependent on definitions of legal rights attached to shares. The owner of common stock does not own a "piece" of the corporation, but a right to a certain *proportionate* share of voting power on a restricted list of issues (including the election of board members), declared dividends, and, in the extreme case, the distribution of the corporation's assets. Board member power is related to the relative dispersal of stockownership. *Where stockownership is widely dispersed, board members have low power; where board members represent major blocs of stock, they have high to moderate influence; where shareownership is highly concentrated, only the board members representing the dominant group of owners have high influence.*

Under high dispersion conditions, the incumbent management (chairman and/or the president) controls the solicitation and voting of proxies, nominates all committee chairmen, assigns them to their duties, and controls the internal process of the board. New board members are appointed at the discretion of the nominating committee, which in turn is a creature of

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the chairman's. In this situation, the board and individual board members are relatively weak.

By possession of a large enough share of votes, a shareowner (or group of shareowners) can press for a seat on the board.[7] Often such representation is equivalent to partial control, for the management wishes to avoid proxy fights and open conflicts. Therefore, the perspectives of the voting bloc get incorporated in management's decision premises. However, there may be several such blocs.

When one person or family controls a major bloc of stock or even a majority,[8] the power of the board, as a whole, and management declines. Here power is centralized as in the case of the widely dispersed ownership situation, but now it is centralized in the hands of the representatives of the owning family or person. While the "forms" of board action are maintained to satisfy legal requirements, the board serves at the discretion of the controlling owners.

At least since Berle and Means (1932) it has been assumed that the historical trend is toward the dispersal of ownership. This particular generalization has served the interests of those arguing "everyone a capitalist," and it has led to a gross oversimplification of the extent of ownership dispersion. It has also encouraged many scholars to assume that boards are powerless. Villarejo's (1961, pp. 51–52) painstaking analysis indicates that of the largest 232 (out of 250 on the 1960 *Fortune* list) industrial corporations for which data were available, the directors as a group owned 5 percent or more of the stock in seventy-six of them. Furthermore, since this does not include stocks of corporations held by other corporations represented on the board, there is no question but that there is even more concentration.[9] Lundberg's (1968, App. B) more impressionistic, but historically rich, analysis would indicate that about two-thirds of the largest 200 corporations have "large" family holdings. Although direct family ownership of a majority of shares may have declined, the control of stock in beneficial trusts combined with direct ownership remains a significant control base.

External funding and facilities control.—The general proposition about

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[7] The ability to "press" for a seat on the board is related to the ability to wage proxy fights and to command the loyalty of other stockholders. The insurgents are more likely to gain other stockholders' loyalties if the company has been unsuccessful in making profits relative to its profit potential. For a dramatic rendering of a proxy fight, see Nizer (1961, pp. 427–524). The ability to press for a seat is also related to the voting rules required by the state. Cumulative voting aids minorities in electing directors (see Williams 1951).

[8] I have been purposefully vague about the percentage of stocks that must be owned by a dominant family. If all other stocks are widely dispersed or held by nonactive groups (e.g., insurance companies, trust accounts in banks, pension funds) even 5 or 6 percent may represent a dominant bloc (see the discussion in Villarejo 1961, pp. 54–55).

[9] Villarejo (1962, pp. 53–54) also studied the distribution of ownership *among* the directors in these 232 corporations. Of 2,784 directors (individuals, some holding multiple directorships), ninety-nine "propertied rich" (those who inherited their shares or who were wealthy before becoming attached to the company in question) owned 73 percent of the shares owned by all directors. Furthermore, 12 percent of *total* shares could be traced to the propertied rich.

the external resource base of board members also applies to control of capital and facilities. For many corporations, profit and nonprofit alike, a major source of board member control and influence stems from their control of crucial inputs of capital, raw materials, or "market."

Control of external resources serves as a lever for board power when the organization finds it difficult to secure these facilities from other sources and requires this resource. We would expect greater dependency on the board members representing banks during depressions than during times of prosperity. Furthermore, industries that are debt ridden would be more likely than others to have representatives of lenders on their boards; the railroads, which are a high debt ratio industry, are reported by Newcomer (1955, p. 54) to have a higher proportion of bankers on their boards than other industries she studied. To the extent that organizations can raise money from ongoing operations, both the money market and the money lender become less important to the organization, and external dependency is decreased.[10]

The proposition about external dependency also applies to nonprofit and voluntary agencies. The historic pattern of raising funds has seen a shift from the support of agencies by a few wealthy philanthropists to mass campaigns and community funds. When agencies were the "agents" of one or two families, or a small circle, the policies and procedures were sharply governed by these members of the board and by the chief funders. As funding shifts to the community fund or to mass drives, the power of the board *as funders* may decrease. Two corollary hypotheses can be stated for voluntary agencies: (1) *The more agencies receive contributions in small amounts from many givers, the less the likelihood of board members having power vis-à-vis the executives.* (2) *To the extent that fund-raising campaigns are based more on a sharp image of need and less on interpersonal relations of board members and fund raisers, we would expect the influence of the board member to be diminished.*

The growth of community funds has a complex relation to the structure of individual boards. The fund represents a centralized source of financial support, and the amount received from the fund can be crucial to the agencies involved.

The funds themselves allocate money through committees made up of businessmen, housewives, and professionals. To the extent that profes-

[10] Commentators of the Berle and Means school have argued that as corporations have grown larger their policy of retaining a large proportion of earnings rather than distributing them as dividends (most of the larger corporations distribute less than half of net earnings) leads to the corporations becoming divorced from the money market, and to the decline of importance of the role of bankers and especially investment bankers. A word of caution is in order. Littner (1959, pp. 166–201) has summarized his studies of the rate of borrowings, bond flotation, and the like. His findings suggest that the rate of corporate borrowings has not declined over time—instead it fluctuates inversely with the cost of money. Furthermore, he concludes that even among the largest nonfinancial corporations there is no long-range trend for increased reliance on internal funds.

sionals dominate the funds, we would expect the boards of the agencies to become less important in interceding for the organization. However, students of these organizations suggest that there is a correlation between the prestige of the boards of agencies and their likelihood of having their requests granted a respectful hearing. Auerbach (1961) suggests that the settlement house serving a slum neighborhood but having an unknown board is less likely than the middle-class agency having a prestige ("power") board to receive a favorable hearing. The high-prestige board member may not only be generally respected but may control significant financial contributions to the fund. If Auerbach is correct, the maintenance of a prestige board facilitates relations with the community fund.

Community legitimation.—Board members may control neither shares nor tangible external facilities and yet "control" an important external resource, a segment of community legitimation. They control community legitimation in that they "represent" diverse groups or interests which can be mobilized to affect the organization. Such organizations as boards of education and government commissions have boards either elected directly by the voters or appointed by the political executive. In general, *the more closely board members are linked to external groups, the more they "represent" community legitimation and, therefore, the more powerful they are vis-à-vis the administrative leadership*. Board members may be elected or appointed and yet not represent group interests if, for instance, appointment is "nonpartisan" and if board membership is largely symbolic. The more diverse and intense the interests in a given organization, however, the more likely the organization is to be politicized and the more likely board members are to represent community segments.

All three of the external bases of power discussed above provide opportunities for factions to arise as groups commanding different resources contend for the definition of organizational goals and directions and for control of the organization. *The larger the number of board members having external bases of power, the more likely are coalitions of board members to arise*. Furthermore, given a number of board members with external bases of power, *the more divergent the definitions of organizational goals and policies, the more likely are the coalitions to resemble factions*.

Even if board members do represent external interests, ownership, or sources of funding, factions need not arise and board members need not attempt to influence managerial decision premises. An ideology of professionalism may lead to an effective abrogation of the role of the board. In such cases, the board serves to provide a mantle of legitimation and community justification (Kerr 1964). Only when a given issue is defined as outside of legitimate professional competence will board members' attitudes and perspectives begin to influence decisions. Thus, Crain and Street (1966) note that, in large cities, on the issue of school policy toward desegregation, it is the board and its attitudes, not the school superintendents' professional or personal perspectives, that predict the outcome of policy debate.

INTERNAL RESOURCES: KNOWLEDGE

Knowledge is a "detachable" resource in that it can be acquired and lost. Detailed knowledge of the organization and its problems is a *sine qua non* of decision making. The board member or executive without knowledge has difficulty influencing the decision process, especially when there are agreed-upon goals. Knowledge can come from detailed familiarity with the specific organization or from general expertise about a given technical process.

Several conditions of organizational size, complexity, and technology condition the ability of boards to have sufficient knowledge to challenge and/or formulate lines of action. At the most general level, sufficient knowledge is a function of the degree of complexity of the organization and the technicality of its knowledge base. *The greater the complexity of the organization and the more technical its knowledge base, the lower the influence of board members.* This proposition leads us to expect, for instance, that larger organizations, with many product lines or task domains and geographically dispersed units, would have a less well-informed board than smaller, more concentrated organizations.

When an organization is small, with few plants, products, and markets, the directors can have independent knowledge of the plants, contact with the staff at several levels, and detailed acquaintance with the community and market situation. As the organization grows larger, the board member becomes increasingly dependent on the staff for his information. Furthermore, the organization is usually structured to channel information to and through the president or chief operating officer. Thus, the board becomes dependent on the executive, and one of their few outside checks becomes the balance sheet, subject to independent audit. Even accounting reports may become so complex that a high degree of familiarity and expertise is needed for their interpretation.

Of course, as the organization becomes larger and more complex, the chief operating officers also become more dependent on *their* staff. But the staff's conditions of work are directly dependent on the executive, and to some extent he is able to use them as his eyes. Even though the executive is formally appointed by the board, his greater knowledge of the full range of organizational concerns allows him to shape the kinds of information they receive and the kinds of matters they discuss.

Boards may be adapted to this imbalance in knowledge by being required to spend more time on organizational affairs (Brown and Smith 1957, pp. 57–59). Sometimes, the appointment of "inside" board members (full-time executives) is recommended as a solution, but the independence of the officer from the chief executive cannot be assured.[11]

The relevance of knowledge to power becomes even clearer if we examine organizations in which various kinds of professionals and scientists furnish

[11] Questions about the functions of inside directors pervade the policy-oriented literature. Wiley (1967) shows that among large corporations there is a slight tendency over time for them to have a greater proportion of outside board members. His findings are at variance with popular stereotypes.

the key services of the organization. For instance, we would expect boards of directors of hospitals to be concerned mainly with financial matters while boards of educational institutions might have a greater say in personnel matters, though not curriculum matters, and finally, boards of such organizations as YMCAs might be involved in decisions about all phases of organizational activity. Where the knowledge base is esoteric, the board is not able to evaluate the requirements of the organization for new lines of endeavor, or to evaluate lines of action and personnel except in terms of fiscal matters.

Again there are adaptive solutions to the imbalance. Boards may delegate to internal committees the evaluation of projects involving technical decision criteria. Second, they may add to the board members with technical knowledge. General expertise, acquired outside of the organization, becomes a base for power.

To this point, I have offered propositions about bases of power which increase or decrease the board members' potential to influence the policies of large-scale organization, focusing on external resource control and the relative imbalance of knowledge. However, this cross-sectional approach is limited in at least two ways. First, I have played down the identities or characteristics of board members that may influence their role in boards. Second, I have ignored the process and phasing of boards that lead them to be more or less important and powerful at different times.

PERSONAL CHARACTERISTICS AND PARTICIPATION

Attributes attached to persons such as social status, sex, and personality are very general factors influencing how an individual will relate to others and how others will respond. While they are not "detachable" resources (at least to the same extent) as were those discussed in the last section, they are external characteristics brought into the board-executive relation from the larger society, and they affect the participation and influence of board members.[12]

SOCIOECONOMIC STATUS

Given the structure of American society and the function of boards in controlling property, in legitimating voluntary agencies, and in linking the activities of diverse institutions, it is not surprising that members of boards of directors tend to be selected from the higher reaches of the stratification system. While some organizations, such as YMCAs and settlement houses may dip into the middle-middle class[13] for a few board members, most

[12] Goffman (1961, p. 30) distinguishes between "external resources" and "realized resources" to discuss the exactly parallel phenomena of how external resources become determinants of interaction locally realized.

[13] In our study of the Chicago YMCA, less than 10 percent of the almost 1,000 board members of the thirty-seven local departments were rated in 1961 as earning less than $8,000 a year.

board members will be drawn from the higher reaches of the socioeconomic pyramid.

The prestige and status of the board member gives him a reputation which affects others' reactions to him, and it gives him a set of expectations of how others should react to him. In general, *the higher the prestige and status of the member, the more likely other board members and staff are likely to defer to his opinions.*

Of course, reputation and generalized status do not fully determine influence. Strodtbeck, James, and Hawkins (1957) have presented data from jury deliberations indicating that the higher-status jury members are more likely to be chosen as foremen and have high rates of initial participation and, presumably, influence. However, they also note that, over time, the correlation between SES, participation, and influence declines. Generalizing from the findings of Strodtbeck et al., we might expect that, *if the only criteria for allocating influence is participation and knowledgeability, the low-status members who participate highly and are knowledgeable will become equal to the higher-status board members, even though officers will be more likely to be drawn from higher-status members.*

However, if the functions of boards involve more than just deliberation (as in the jury), the external resources of votes controlled, access to funds, and prestige which can be used in interorganizational relations will guarantee to the higher-status board members a greater share of influence. (See the above discussion of the role of "power" boards.) Furthermore, if we compare boards composed of people of different status levels, those in higher-status boards are likely to expect a higher level of deference and influence than boards composed of people from the middle ranks (Moore 1961).

The comments above also apply to the relation of executives *to* boards as well as *among* board members. Some boards employ executives whose salaries and status may be equivalent to or higher than that of the board members (e.g., in some YMCAs and in school boards). If so, executive influence is enhanced.

SEX

Societal role definitions associated with sex also influence board member participation. Babchuk, Marsey, and Gordon (1960) found that, in a middle-sized community, women are more likely to be on boards of smaller and low prestige organizations than on the boards of the larger voluntary agencies—the hospitals and universities. Not only do women have less command of external resources—they rarely represent major bureaucratic organizations—but, on the average, they are socialized to more passive role taking. In boards with male executives, we would expect women to have less influence than men, to participate less freely in discussion, to be less assertive, and to be taken seriously to a lesser degree.

Other personal characteristics also influence board-executive interaction. The range of personality and self-presentation variables that are relevant is well known. Instead of pursuing them, the discussion turns to phases of

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organizational growth and change that implicate board power. In these last two sections resources have attached to the individual role occupant. But now we turn to power resources attached to the situation, that is, to the role expectations and definitions created by the ongoing social system.

STRATEGIC CONTINGENCIES SITUATIONS

Examination of the functioning of a board over long periods of time would reveal an ebb and flow of board functions, importance, and power during different phases of organizational development and activity. Organizational phases affect the power of boards in several ways. First, at some points in the history of an organization, the formal requirements of board ratification and action require at the very least that managers get the approval of the board. Even if the board is but a rubber stamp, such periods allow some reinforcement of the image of board power. Furthermore, at such times dissident board members have a chance to crystallize board discontent with management and to express such discontent. At other times, the absence of meetings and debated issues prohibits such expression. Second, the phases of organizational development require the board to perform activities in the service of the organization—such as fund raising—that give it power over the managers. Thus some of our "cross-sectional" propositions (above) may also be implicated in the phase development of organizations.

Let us specify a number of broad organizational problems that not only require board action but also seriously implicate the responsibility of board members to debate and decide organizational matters.

The general proposition is that *it is during the handling of major phase problems, or strategic decision points, that board power is most likely to be asserted.* It is at such times, too, that basic conflicts and divisions both within the board and between the managers and the board are likely to be pronounced. Three types of broad-phase problems are discussed: life-cycle problems, choosing of successors, and fund-raising and facilities expansion.

LIFE-CYCLE PROBLEMS

Life-cycle problems are those of organization genesis, character formation and transformation, and basic identity.

Organization genesis.—When a corporate organization is newly established, or when the board as a responsible agent is being formed, a great deal of attention is likely to be paid to the formulation of policy, the roles of managers and boards, and the formulation of guidelines for actions. *Boards will meet regularly and often, and it is likely that board power and influence will be continuously used and called upon.*

But qualification is in order; many business corporations develop out of individually owned firms or partnerships. If the new board does not control ownership certification, the power of the board may be relatively restricted during this period.

Character crises and transformation.—Organizations develop characters which become institutionalized in procedures and modes of handling problems. Organizational character, a term used by Selznick (1957), is the standard pattern developed for resolving recurring and basic problems and conflicts within the organization and with the organization's environment. These include such aspects of organization environment and intraorganization relations as labor policy, major product emphases, market strategies, relation to competitors, and quality-quantity emphases.

Pressures to change these aspects of character almost inevitably become issues for the board of directors. First, both legal requirements and the standard functions of boards in policy setting become obviously implicated when the major dimensions of the organization are subjected to change. Second, if these aspects of character have developed qualities of the sacred and traditional, as so often happens, changing them is likely to develop conflict. The managers will be forced both by divisions among the managers and by the awareness of concerned board members to bring such matters to the board.

In general, *the more routine and stable the organization in all its aspects— for example, labor, market, financing, etc.,—the less likely are crises of character to occur and the less likely are boards to be mobilized.*[14]

Moreover, *character crises are likely to be more difficult to solve in organizations without computational criteria*[15] *for choosing among alternatives.* For instance, voluntary welfare agencies with their ambiguous goals and unproven means are likely to have more prolonged debate on such matters than are businesses.

Identity crises.[16]—Large-scale organizations have identity crises of several kinds. One is the crisis of mergers in which the existence of the organization as an organization is threatened, even though there is perpetuation of the function and the capital of the organization. A second is the threat to vanish entirely. A third identity crisis is involved in joint undertakings with other organizations. Such joint undertakings partially restrict the autonomy and independence of organizations.

Because there are often clear benefits to be gained through organizational mergers or joint undertakings, it is possible that business corporations, as a class of organizations, have a higher rate of identity crises than other kinds of organizations. However, YMCAs, orphanages, settlement houses, ethnic-based community centers, religious denominations, universities, governmental commissions, and others have all faced identity crises—problems of fission and fusion. Again, it is when issues like these are debated that boards are most fully involved and likely to have influence.

[14] See an interview with Cordiner (1967), former president of General Electric, for a discussion of the role of the board during GE's internal transformation of organizational structures.

[15] The phrase "computational criteria" refers to known means to agreed-upon goals (see Thompson and Tuden 1958, pp. 195–216).

[16] Identity crises are subcases of character crises—i.e., those subcases in which an organization's social recognition as an entity are at stake.

CHOOSING A SUCCESSOR

Often the only real contact board members have with the organization is through the chief executive, and one of the prime responsibilities of boards is the choice of effective managerial leadership. In some organizations the board chooses only the chief executive, but in others the board may take an active part in appointing most upper executives. The amount of active participation in appointing upper executives is probably a good index of its power. More important here, *it is at the time of choosing a successor that board power is most mobilized* (Zald 1965).

Succession processes can vary greatly. Of course, if a dominant executive or controlling group creates a "crown prince" or appoints the successor, then the board as such only ratifies the appointment. A crown prince appointment by a chief executive (not by a controlling ownership group) can only be effective when a retiring chief has been seen as successful. Thus, just as we suggested that the board is more likely to be active when an organization is involved in crises, so too *is it more likely to be active in choosing a successor when the organization is facing a crisis.*

The choosing of a successor often allows the basic questions of organizational mandate, character, and identity to come to the fore. Since the choice of the executive is so closely linked to decisions about organizational directions, it is natural to have a period of stock taking at that time.

Since the mobilization of board influence occurs around the time of succession, the periodicity of succession becomes of great importance. Because of deaths, age, and career patterns, some boards may be confronted fairly often with questions of succession, while others may only confront this question once in a generation. (Some Protestant denominations appoint their ministers yearly, while many larger business corporations try to arrange for ten-year terms for their chief executives.)

CONCLUSIONS

Such phrases as the "managerial revolution" or the "power elite" call to mind great forces and processes in society. Some of the propositions implied by the metaphors are patently true. For instance, it is clear that large bureaucratic organizations are hallmarks of modern society, and, consequently, the heads of these organizations are in a position of potential power. Nevertheless, detailed investigation is required to spell out the conditions of their power and their relative power in different situations. Eventually, a complex theory of power and control in modern society will be required.

Without directly attacking the global questions posed by Burnham (1941) and Mills (1957) we have dealt with one aspect of the phenomena they discuss—the control of major bureaucratic organizations. In particular we have suggested a range of external detachable resources, personal characteristics, and strategic contingency situations that affect the conditions of board power. Many of the hypotheses presented appear

fairly obvious. Nevertheless, taken together, this presentation, I believe, demolishes the cavalier approach to boards taken by both economists and sociologists. Boards of directors may sometimes be impotent, and they may sometimes be all powerful. The question is: In what kinds of organizations under what conditions?

Furthermore, more complex theoretical treatments are possible. Boards may be most implicated in decisions when the unified chain of command is broken up. For instance, as hospitals have come to look more like pluralistic polities, boards may reenter the power arena either at the invitation of the contending parties (Perrow 1963, pp. 112–46)[17] or on their own accord. Furthermore, the stance of the manager may lead to great variation in board involvement and power. Chief executives range from those that are obsequious to their boards, to those that are Machiavellian—manipulating consensus—to those that are disdainful or at least unconcerned with their boards. Executives help to develop traditions of board consultation and influence, and these traditions can become binding upon the organization. Social-psychological variables of interest and commitment are also important, for it may be that lack of interest is a basic cause of the diminishment of board influence.

This work has been largely theoretical. At this point, there is a scarcity of meaningful data, and only at a few points have I been able to tie my arguments to evidence. Boards of directors are hard to study. Often they conduct their business in secret; their members are busy people; the processes themselves are sometimes most effectively described by novelists. Nevertheless, study is possible, and pieces of evidence can be brought to bear. The difficulty of study is more than compensated for by the theoretical and practical importance of the problem.

REFERENCES

Auerbach, Arnold J. 1961. "Aspirations of Power People and Agency Goals." *Social Work* 6 (January):66–73.
Babchuk, Nicholas, N. R. Marsey, and C. W. Gordon. 1960. "Men and Women in Community Agencies: A Note on Power and Prestige." *American Sociological Review* 25: 399–403.
Baltzell, E. Digby. 1958. *Philadelphia Gentleman, the Making of a National Upper Class.* Glencoe, Ill.: Free Press.
Berle, A. A., Jr., and Gardner C. Means. 1932. *The Modern Corporation and Private Property.* New York: Macmillan.
Brown, Courtney C., and E. Everett Smith. 1957. *The Director Looks at His Job.* New York: Columbia University Press.
Burnham, James. 1941. *The Managerial Revolution: What Is Happening in the World.* New York: Van Rees.
Cordiner, Ralph. 1967. An Interview with Ralph Cordiner. *Forbes* 100 (October 15): 30–37.
Crain, Robert L., and David Street. 1966. "School Desegregation and School Decision-making." *Urban Affairs Quarterly* 2 (September):64–83.
Davis, John P. 1961. *Corporations.* New York: Capricorn Books.

[17] Perrow traces out the changing context of board power and involvement in hospital affairs.

Goffman, Erving. 1961. *Encounters*. Indianapolis: Bobbs-Merrill.

Gordon, Robert A. 1945. *Business Leadership in the Large Corporation*. Washington, D.C.: Brookings Institute.

Heffernan, W. Joseph. 1964. "Political Activity and Social Work Executives." *Social Work* 9 (April):18–23.

Hunter, Floyd. 1963. *Community Power Structure*. Garden City, N.Y.: Anchor Books.

Kerr, Norman. 1964. "School Board as an Agency of Legitimation." *Sociology of Education* 38 (Fall):34–59.

Lattin, Norman D. 1959. *The Law of Corporations*. Brooklyn: Foundation Press.

Littner, John. 1959. "The Financing of Corporations." In *The Corporation in Modern Society*, edited by Edward Mason. Cambridge, Mass.: Harvard University Press.

Lundberg, Ferdinand. 1968. *The Rich and Super-Rich*. New York: Lyle Stuart.

Marris, Robin. 1964. *The Economic Theory of 'Managerial' Capitalism*. New York: Free Press.

Mills, C. Wright. 1957. *The Power Elite*. New York: Oxford University Press.

Moore, Joan A. 1961. "Patterns of Women's Participation in Voluntary Associations." *American Journal of Sociology* 66 (May):592–98.

Newcomer, Mabel. 1955. *The Big Business Executive: The Factors that Made Him*. New York: Columbia University Press.

Nizer, Louis E. 1961. *My Life in Court*. Garden City, N.Y.: Doubleday.

Perrow, Charles. 1963. "Goals and Power Structure: A Historical Case Study." In *The Hospital in Modern Society*, edited by Eliot Friedson. New York: Free Press.

Selznick, Philip. 1957. *Leadership in Administration*. New York: Harper & Row.

Strodtbeck, Fred L., Rita N. James, and Charles Hawkins. 1957. "Social Status in Jury Deliberations." *American Sociological Review* 22 (December):713–19.

Thompson, J. D., and Arthur Tuden. 1958. "Strategies, Structures and Processes of Organizational Decision." In *Comparative Studies in Administration*, edited by J. D. Thompson et al. Pittsburg: University of Pittsburg Press.

Villarejo, Don. 1961. "Stock Ownership and the Control of Corporations." Pts. 1 and 2. *New University Thought*, vol. 2 (Autumn).

———. 1962. "Stock Ownership and the Control of Corporations." Pt. 3. *New University Thought*, vol. 2 (Winter).

Wilensky, Harold L., and Charles N. Lebeaux. 1965. *Industrial Society and Social Welfare*. New York: Free Press.

Wiley, James A. 1967. "Trends in Board of Directors Structure in Industry." Unpublished paper, Vanderbilt University.

Williams, Charles. 1951. *Cumulative Voting for Directors*. Cambridge, Mass.: Graduate School of Business Administration, Harvard University.

Zald, Mayer N. 1965. "Who Shall Rule: A Political Analysis of Succession in a Large Welfare Organization." *Pacific Sociological Review* 8 (Spring):52–60.

Advertising Themes and Quiet Revolutions: Dilemmas in French Canada

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Advertising themes both illustrate and are themselves sometimes caught in the dilemmas facing many French and English Canadians in the midst of the "Quiet Revolution" in Quebec. In the 1950s, French Canadians in advertising developed advertising campaigns that harked back to the past and reinforced traditional stereotypes. Recently however, supported by English advertising executives, they have catered to the nationalistic strivings of the French Canadians. This article describes how one such campaign backfired and draws conclusions which extend into the broader context of conflict and intergroup relations.

Canada has recently experienced what has popularly been called a "Quiet Revolution." The French Canadians who make up some 80 percent of the population of the Province of Quebec, and most of whom have been economically and educationally far behind their English-Canadian compatriots, rebelled in two respects. First they challenged their tradition-oriented way of life and sought to modernize the province. Second, they fought—not for the first time—against their subordinate status and asserted their rights of equality vis-à-vis the English Canadians. The movement had been smoldering with sporadic manifestations for many years, but its intensity and rapidity, beginning in 1960, was so great that the term *revolution* is not inappropriate. The precipitating event was the death of the leader of the National Union Party, Premier Duplessis, and the victory at the polls of the more dynamic and forward-looking Liberals. The new government, supported by mass media, youth, intellectuals, labor, and significant segments of the church and business community, led the movement to update French Canada economically and socially and to become "maîtres chez nous."

No facet of French-Canadian life remained untouched by the Quiet Revolution. Modernization was one central theme, evidenced in the increase of highway construction, the reform of the police structure, the letting of government contracts by tender, new directions in education, and legislation awarding more rights to women. Renaissance of the French language and culture was another theme, manifested in the increasing exchange of academics, technical specialists and visitors with France; a more liberal movie censorship policy; campaigns to improve the language, spoken and written; and assistance by the government to artists and writers. Expo, the international fair in 1967, was still another indication of the energy and confidence generated. Underlying and giving impetus to the entire movement was a strong spirit of modern French-Canadian nationalism. Nation-

alist pressures came from all directions—the provincial government expropriated an English-controlled power company; labor demanded that union contracts be written in French; editorial writers condemned policies of discrimination against French Canadians in government and industry; numerous groups asked that French become the sole official language of the province; and restaurants in which waitresses did not speak French were boycotted. College students above all served to spearhead many of the demands and took the lead in public displays and demonstrations. Perhaps most symbolic was the withdrawal from the annual St. Jean Baptiste Day parade of the boy, representing John the Baptist, walking with a lamb. No symbol was less appropriate to the times.[1]

As part of a larger study of advertising and social change in French Canada, we have analyzed the themes of French-language national advertising before and during the Quiet Revolution.[2] These advertisements are expressions of a complex situation. Generally, they are written by English Canadians who wish to keep abreast of the changing milieu but not disrupt the socioeconomic status quo. The ads are then translated or adapted by relatively well-educated French Canadians who wish to participate in the Quiet Revolution yet do not wish to endanger their career lines in English-Canadian companies. The advertisements, finally, are directed in French-language media to ethnically conscious French Canadians who are struggling to raise their skills and assert their power. The problems associated with advertising, because their rays extend so widely into the society, strikingly point up issues and dilemmas occasioned by the rapid social change.

ADVERTISING THEMES BEFORE THE QUIET REVOLUTION

National advertising, like other industry in Quebec, was introduced primarily by English-speaking Canadians and Americans. The general policy was to take a very carefully prepared English advertisement and turn it over to a French-Canadian translator for a quick, routine, more or less literal translation. Translation was not considered difficult; presumably anyone who knew both languages could do the job.

Over the years, French-Canadian translators and clerks, through working in advertising agencies, underwent an informal apprenticeship and learned the advertising business. At the same time, doors formerly closed were opened and many French Canadians attained positions of moderate responsibility. In the 1950s, the French Canadians who were moving ahead

[1] The Quiet Revolution has been widely discussed (Royal Commission 1965, 1967; Guindon 1968:33–59; Scott and Oliver 1964; Jones 1967; Garigue 1963; Desbarats 1965; Sloan 1965; Elkin 1964a). The classic study of French Canada before the Quiet Revolution is still Hughes, *French Canada in Transition.*

[2] Among topics considered in the larger study are the place of French Canadians in the occupational structure of advertising, the role of their professional association, newly organized French-directed agencies, and issues in bilingual advertising. For a preliminary discussion of some of these issues see Elkin 1964b.

in advertising began to argue that French Canadians had a distinctive culture and that French-language ads were often badly translated, inappropriate, and ineffective. Minor adaptations *were* sometimes made: A girl at a typewriter, called Betty in an English advertisement, became Blanche in the French; a coffee ad in the French translation added "Préparé à Québec." But few such changes touched on basic themes, styles or personality differences (Elkin 1961). French Canadians argued that the advertisements were Anglo-Saxon in spirit and were passing the French Canadians by. The ads, they said, should be directed to the values, interests, and dispositions of French Canadians. In a few instances, the French Canadians were permitted to develop distinctive campaigns, the most notable occurring during the Korean War in 1951. A series of ads was developed in which the themes turned back to the heroes of the past, to the heroic explorers, settlers, and pioneers of early Canada. The recruiting ads for the navy, for a life at sea, referred to the courageous fishermen of Brittany and Normandy who founded Canada and such famous sailors of French-Canadian history as Champlain, Cartier, and d'Iberville.

The advertisements for the army above all emphasized the pride in and necessity of defending the French-Canadian heritage. One advertisement showed a pastoral scene with a blazing religious cross in the foreground. The heading was a line from the French version of the anthem *O Canada:* "Protégera nos foyers et nos droits"—protect our homes and our rights. The theme of the air force advertisements sought to establish a link between the *coureurs des bois,* the early French explorers of the forest, and the modern men who fly and handle the planes, both courageous pathfinders appropriate to their times.

To the French Canadian in advertising, the campaign was a veritable milestone. For the first time, tens of thousands of dollars were turned over to French Canadians to create ads to be directed solely to French Canadians. The armed forces campaign had sought to recruit soldiers. Why, argued the French Canadians, could not the same principle be carried over to commercial products? Some companies were willing to try. In 1957, Labatt's Brewery developed a new campaign for its anniversary "50 Ale" known in French as "Bière 50." The English campaign stressed the "modern" touch with scenes of golf and various social activities. The campaign in French, however, featured a short, stocky lumberjack, known as Monsieur Cinquante, wearing a checkered shirt on which appeared a number 50. The lumberjack, strong and fearless, was a well-known symbol in French-Canadian history and lore. A Monsieur Cinquante walked the streets giving out fifty-cent pieces to passersby and appeared on television commercials discussing hunting and fishing in Quebec. In magazine cartoon-type advertisements, he scored a spectacular hockey goal and rescued a skater in distress while holding onto a cliff with one bare hand. The advertising copy spoke of the beer as "brassé dans le Québec au goût du Québec" —brewed in Quebec to the taste of Quebec.

At the same time, Labatt developed still another campaign with a distinctively French-Canadian flavor. This campaign, an institutional type

focusing on the company name, centered on genealogy, a subject of popular and fascinating interest in Quebec. The approximately five million French Canadians in Canada today may be traced back to only ten thousand or so French settlers who arrived on this continent in the sixteenth century. Thus, a relatively small group of men passed down their names to modern French Canadians and many similar names are held by thousands of families.

The interest in genealogy among French Canadians has always been linked with the glory of French Canada's early history. The popular historians portrayed the settlers as courageous, valiant, and hardy pioneers who, under great hardship, cleared the forest, hunted wild animals, fought the Indians, and tilled the land. Labatt, taking advantage of its French-sounding name and the fact that one settler was a namesake, launched a campaign entitled "Vieux noms du Québec"—old names of Quebec. A genealogist traced the ancestry of the most common names, obtaining for each such information as the place of origin in France, the area of settlement and occupation in New France, the date and partner of marriage, and the number of children. A brief biographical sketch was written about each settler and an artist made a pen line drawing of the man at his task, for example, tilling the fields, fighting Indians, or sailing ships. These sketches and biographies were placed as ads in newspapers throughout Quebec and offered by letter to anyone whose name was that of the original settler. In all these advertisements, the copy, like the campaign of the armed forces, appealed to the traditional and heroic glory of the French-Canadian past. The sketches were idealized and the biographies written in flowery and embellished style. To cite one example, the family name *Caron:* "It is thus that our gallant ancestors toiled under the yoke of harsh labor and suffering to establish and make prosperous the new colony which has so long and proudly borne the name of New France."

Other French Canadians in advertising seeking to develop distinctive campaigns looked to French Canada's musical and folk heritage. One series of radio commercials for a breakfast cereal employed jingles to the tune of Cadet Rousselle and Le roi Dagobert. Another in the late 1950s which was adapted from two French-Canadian folk songs went as follows:

Il faut bien que je l'admette
Mon amoureux a le genre pique-assiette
Il bouffe mes crêpes suzette
Puis il prend sa casquette
En voyant la vaisselle qui le guette.
Ah, que deviendrais-je, grands dieux!
Si je n'avais pas le Surf Bleu
(Chorus)
Laver la vaisselle est un jeu
Avec le nouveau Surf Bleu
Un petit trempage,
Un petit rinçage,
Et tout brille
Tout scintille,
Y a rien de mieux pour laver la vaisselle
Y a rien de mieux
Que Surf Bleu

In other specific advertisements, French Canadians were substituted for English-Canadian personalities. For example, an English ad pictured King Ganam, a well-known cowboy fiddler; the French-language advertisement substituted a popular French-Canadian recording artist, Willie Lamothe.

Thus, French Canadians in advertising even before the Quiet Revolution were not without influence and were sometimes given budgets to develop their own campaigns. What is striking in these campaigns, however, is that the themes almost always harked back to the French-Canadian past. Heroes were sometimes pioneers of two centuries ago; the lumberjack was a traditional folk figure; the songs stemmed from childhood or an idealized rural life. The appeals were to a heritage, patriotism, and loyalties learned long ago in the schools and around the hearth. None, in the slightest way, suggested any threats to the powers that be, to the tradition-oriented French elite, the superordinate English, or to the ongoing relationships between the English and the French. The military advertisements, for example, did not mention the fate of the French language or culture once recruits joined the forces, and the lumberjack advertisement did not observe that he was an unskilled worker in the employ of the English.

ADVERTISING DURING THE QUIET REVOLUTION

Like other middle-class French Canadians, those in advertising were deeply emotionally involved and eager to participate in the Quiet Revolution.[3] In part, this meant upholding the values of the Quiet Revolution; in part, it meant fighting within the English-controlled advertising world for more French-language advertising, more attention to its quality, and more original campaigns. But herein lay a dilemma. To contribute to the Quiet Revolution and receive recognition from French Canadians, they had to be aggressive toward the English; but if they fought too vigorously they jeopardized their chances for successful careers. In the final analysis, the French Canadians in advertising resolved this dilemma by fighting for French-language advertising while simultaneously stressing their expertise in advertising and their faith in its ideology. (See my forthcoming report.) Specifically regarding the themes of advertising, they promoted ideas which were appropriate to the spirit of the Quiet Revolution, yet effective, presumably, in increasing sales.

Such themes were found, above all, in references to national and ethnic identity. To French Canadians, such advertisements demonstrated a concern with and respect for French Canada; to English Canadians they were appropriate appeals to the emotions of the target group. The French-Canadian ethnic identification was represented in several ways:

1. Testimonial-type references. This is a common device. The person represented may or may not be a public figure, but he is, by name or

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[3] The carriers of the Quiet Revolution in Quebec represent a wide range of social levels of which the most significant is probably the "new middle class." See Brazeau (1963) and Guindon (1964).

otherwise, identified as French Canadian. For example, in newspaper or magazine advertisements, an insurance broker, Monsieur Pellerin, is shown using a Pitney-Bowes Automatic Stamping Machine; a Monsieur Lalonde is being interviewed by a Mutual Life Insurance Company agent about a combination life insurance–mortgage policy; and a French-Canadian teacher is borrowing $1800 in thirty-five minutes from the Bank of Nova Scotia.

2. Geographical references. Gage Envelopes headlines an ad in French "Fabriqué au Québec"; Dow Breweries, in an ad for Black Horse Ale, says, "Brassé à Montréal et à Québec"; and Kodak displays a picture of the Citadel in Quebec City instead, as in the English original, of the Parliament Building in Ottawa.

3. Language idioms and symbols. Labatt Breweries introduces a series of ads with "Dans la Belle Province"; Molson Breweries, for one of its beers, employs a traditional rooster symbol; dozens of companies seek identification through the expressions, "chez nous," and "les Québecois"; and such idioms as "ça bouge au Québec," "d'ac," or "le magasin à l'accent français" abound.

4. Current activities indicating progress. A few companies associate themselves with progressive economic developments. Moore Business Forms, for example, cites its factory in Quebec and displays photographs of French-Canadian company managers who use Moore products; and General Motors of Canada, when opening a new plant, headlines an ad "Ils ont construit les premières Québecoises."

5. Popular culture of Quebec. Quaker Oats Company, with appropriate advertising copy, introduces Capitaine Crouche as a French counterpart for Cap'n Crunch and a cereal, Tintin, modeled after a famed French-language cartoon character. Other companies refer to such popular leisure and sports activities as fishing, hockey, skiing, and snowmobiling.

All told, such advertisements with an ethnic identification make up but a minor proportion of French-language advertisements by national English companies. The percentage of commercials on two French-language radio stations in 1964 referring to Quebec or things French, omitting duplicated commercials, was but 6.6 percent, and in television stations 9.9 percent, but even such a low proportion means thousands of repetitions in the course of a year and, compared with the situation before the Quiet Revolution, represents an enormous increase.[4]

THE CASE OF KÉBEC

The hazards faced by English advertisers in attempting to adapt are strikingly shown in the incidents surrounding the launching of a new beer,

[4] By virtue of being English controlled, the companies were limited in the nationalist appeals they could use. They could not, as did one French-Canadian owned company, speak of "The only French-Canadian enterprise of automatic distributing machines," or say, as did a French-Canadian producer of cigarettes, that the particular brand name, "La Québecquoise," reflected the need to give French Canada a tobacco industry and to promote the economic, technical, and cultural expansion of "our people."

called Kébec, by Dow Breweries in 1963. The basic device of the campaign was tried and true—associate the product with a sentiment deeply felt and approved by the potential buyers, in this case the ethnic identity and nationalism of French Canadians. Citing ads in the newspaper *Le Devoir*, the campaign began with a teaser-type advertisement on November 6 reporting an announcement to follow and showing a bit of a symbol. In the following four days, advertisements continued to report the forthcoming announcement, with each succeeding advertisement presenting a bit more of the symbol. On November 11 came the grand launching. On the top left side of a large advertisement was a portrait of Jean Talon, a hero of French-Canadian history. On the top right side were pictures and names of nine French-Canadian executives of Dow Breweries, including a vice-president who was also a member of the Board of Governors of the University of Montreal. In the lower right side was the new trademark, a design of a large beer bottle on which was the complete symbol, a stylized "K" and the name Kébec and, just to the left, a figure in the costume of the old French regime holding a flag which resembled that of the Province of Quebec. The cross and fleur-de-lis of the Quebec flag were replaced by a part of the "K" and a crown, the symbol of Dow Breweries. The copy of the advertisement reads as follows: "The management of Dow Breweries of Quebec presents to you La KÉBEC. A true beer expressing the taste of modern Quebec. Reflecting the image of the State of Quebec today, La Kébec is perpetuating in French Canada a centuries-old tradition of quality. The French Canadians who direct Dow Breweries of Quebec are to a degree the successors of the great Jean Talon, the illustrious governor of New France who was also the first director of a brewery in Canada. The vaults of the old brewery of the King form part of the inheritance of Dow Breweries of Quebec and the name we have chosen signifies the blending between the Quebec of today and the Quebec of our French origins. In Quebec . . . La Kébec."

The nationalistic overtones of the advertisement are evident. Kébec was the original Indian name given to the site chosen by Champlain for the capitol of New France and an old spelling of Quebec. Jean Talon was an honored historical figure after whom streets and hospitals were named. The advertisement mentions Quebec eight times and Kébec four times. The copy also speaks of "l'Etat du Québec," the term adopted by strong nationalists and separatists to suggest that Quebec deserved to be called a state in its own right. It was explicitly announced that the directors of Dow Breweries in Quebec were French Canadians, with no mention that the majority of shares were held by an English-Canadian company. And a final nationalistic touch was the trademark with its flag resembling that of Quebec.

Two days later another advertisement for Kébec appeared with a copy of a painting representing a dancing party at the governor's palace at the time of Jean Talon. The copy spoke of "Kébec" as a descendant of the beers brewed in New France by the great Jean Talon, of the French-Canadian directors of the company, and again displayed the trademark of the bottle and figure holding the flag.

But the very same day a storm broke. On page 3 of *Le Devoir* appeared a story in which the RIN, the Rassemblement pour l'Indépendance Nationale, the largest and best known of the separatist groups, accused Dow Breweries of scandalously exploiting the Quebec flag and insulting the Quebec population for commercial reasons. The company was referred to as the "Toronto Dow Breweries" and "Toronto capitalists," and was accused of replacing the fleur-de-lis by the crown, the very symbol of Quebec colonialism. RIN asked all "indépendantists" and all self-respecting French Canadians to boycott not only Kébec beer but all the products of the "Toronto Dow Breweries," and invited the provincial government to take all necessary measures to prevent the exploitation of national symbols for commercial ends.

The argument was taken up in the student newspaper at the French-language Université de Montréal. An open letter by two students addressed to the vice-president, who was a member of the University Board of Governors, spoke of their "stupefaction and profound disgust" at the treatment given the official flag of "l'Etat du Québec." Another student writer bitterly condemned the brewery for exploiting nationalism for commercial ends and for its "burlesque transformation" of the national flag.

On November 26, just two weeks and a day after the appearance of the first complete advertisement, the director of Dow's Public Relations Department announced that this campaign for Kébec beer was being withdrawn. But the company admitted no offense. The management, according to the release, had never intended to take advantage of sacred symbols; they were in fact, through the name Kébec, doing their part to help give the province its "visage français." They had sought a name and a presentation that was indisputably French Canadian.

This incident has several implications. First, this advertising campaign was not very different in tone or quality from many other contemporary campaigns in Quebec, but it did go further than others in adapting the flag and thus linking a sacred symbol with the "profane" aim of selling beer. Even more important, because Dow was controlled by an English-Canadian corporation, critics could claim that the whole campaign smacked of blatant and deliberate deception. Further, looking at the French-Canadian groups themselves, the lines of action were relatively easy to choose for separatists or others whose position was extreme. What better incident to draw attention to themselves and show that their interests lay on the side of the French-Canadian public versus the unscrupulous English-Canadian corporation! For those, however, who sought to tread a balance, acting on behalf of the Quiet Revolution presented complications. We have no reason to doubt that those French Canadians who launched Kébec beer, among their varied attitudes, did feel that they were contributing to the "visage français" of the province and the Quiet Revolution.

CONCLUSION

We may venture a further analysis of this incident in the context of the social structure and the mass society. The English directors and their

French-Canadian advisors approached their audience—as mass communicators generally do—as a collectivity of individuals responding to particular themes. The audience was diagnosed as French Canadian, potential beer purchasers or beer-purchase influencers, and imbued with a nationalist ideology. The campaign was appropriately developed. But, as we have seen, the diagnosis was inadequate and the campaign boomeranged. Wherein lies the blunder? The error, we suggest, was not in the interpretation of the ideology but rather in the image of the social structure.

A mass communicator, wittingly or otherwise, has some image of the social structure to which he directs his message. In the past, the English advertisers and their French-Canadian advisers took for granted the traditional image of the French-Canadian social structure, recognizing the superior position of the English and the power within the French-Canadian community of such groups as the church, political parties, and liberal professions. No ad would ever have threatened these significant groups. With the Quiet Revolution the social structure had obviously changed, but the significance of the change did not impinge on the English and French-Canadian communicators. They continued to take the social structure for granted and continued to view the effective audience as a group of isolated individuals responding to particular themes. For advertising of everyday products and services, this image was sufficiently relevant to be successful. However for this particular advertising campaign, in the changing emotional context of the Quiet Revolution, the image served badly. It ignored completely such new power groups as separatists, student activists, and liberal journalists who, in their power to gain attention in the mass media and mobilize forces, had assumed an importance probably superior to any other groups in the province.

The opportunity offered to the separatists and strong nationalists in this particular instance fitted nicely, as we have seen, into their own power and ideological struggle. It gave them an issue which enhanced their position and a target, the English companies, which could only, since they had to avoid controversy, retreat as quickly and gracefully as possible.

To what degree are the advertisers who wish to take advantage of French-Canadian symbols placed in an insoluble dilemma? Might any such symbol, in the current context, be considered commercial exploitation? The answer, as some of the earlier examples indicate, is not necessarily "yes"—testimonials, popular culture identifications, and numerous other devices have been successfully adopted. But these messages and devices have had precedents, have been more tempered in style, and have not so obviously given newly emergent power groups the opportunity for exploitation. The product, the ongoing patterns, and the ideology must of course be considered, but so too must the changing social structure.[5]

We may also seek to place our case material in the broader context of conflict and intergroup relations. In so doing, we find support for the follow-

[5] The significant research relating communication to social structure, aside from informal groupings, is meager indeed (Larsen 1964).

ing four propositions—proceeding from the less to the more hypothetical—which extend far beyond our study of advertising in French Canada as such.[6]

1. When the subordinate group does not threaten the dominant group, it is free, and in fact even encouraged, to express traditional aspects of its culture which, while serving important psychological and social functions, simultaneously reflect the group's subordinate position. Thus the French-Canadian advertising personnel before the Quiet Revolution met no opposition when they introduced folk symbols into their advertisements. Thus, too, the nonthreatening Indians and Eskimos are encouraged to develop their native arts, the southern Negroes to sing spirituals and folk songs, and immigrant groups to initiate language and folk-dance classes.

2. When the subordinate group gains sufficient power and will to pose a threat, the dominant group seeks to turn the subordinate group sentiments to its own benefit. In our study, the advertisers adapted French-Canadian nationalism. In other contexts, national American advertisers in Negro-oriented magazines cite testimonials from Negroes; corporations invite subdominant group members to take figurehead positions and some companies organize company unions with profit-sharing plans.

3. Conflict-oriented members of the subdominant group will seek to turn the arguments of the dominant group to their own advantage. Thus French-Canadian separatists argue that the English companies defile their sacred symbols. They affirm likewise that French-Canadian directorships in English-controlled companies more likely represent "window dressing" than a recognition of French-Canadian talent and influence. Similarly, militant students and labor leaders argue that invitations by officials and management to join committees are merely "tokenism" and attempts to turn aside legitimate grievances.

4. Those members of the subdominant group who simultaneously advise the dominant group and identify with their own group's aspirations seek to resolve resulting personal dilemmas by presenting different images to the two groups. The French-Canadian advisers in our case study argued to the English that they had a good campaign and to the French that they were contributing to the "visage français." The Negro, student, or labor liaison representative in other conflict situations may stress his militancy before one group and his statemanship or spokesmanship role before the other.

In one sense, these propositions are illustrations from our data; in another, they are hypotheses to be tested wherever groups are in conflict and subdominant group intermediaries serve the dominant group.

REFERENCES

Brazeau, J. 1963. "Quebec's Emerging Middle Class." *Canadian Business* 36 no. 3 (March):30–40.

[6] Disregarding researches concerning discrimination and prejudice, those touching on the relationship among intergroup conflict, mass media symbols, and status dilemmas are rare. For a framework covering the former type of study, see Rose (1960).

Desbarats, P. 1965. *The State of Quebec.* Toronto: McClelland & Stewart.

Elkin, Frederick. 1961. "A Study of Advertisements in Montreal Newspapers." *Canadian Communications* 1, no. 14 (Spring):15–22; 30.

———. 1964a. "Biculturalism in Quebec." *The Social Worker* 32 (January–February): 13–23.

———. 1964b. "Advertising in French Canada: Innovations and Deviations in the Context of a Changing Society." In *Explorations in Social Change,* edited by G. Zollschan and W. Hirsch. New York: Houghton Mifflin.

Garigue, P. 1963. *L'Option politique de Canada français.* Montréal: Editions du Levrier.

Guindon, 1964. "Social Unrest, Social Class and Quebec's Bureaucratic Revolution." *Queen's Quarterly* 71 (Summer):150–62.

———. 1968. "Two Cultures: An Essay on Nationalism, Class, and Ethnic Tension." In *Contemporary Canada,* edited by R. H. Leach. Toronto: University of Toronto Press.

Hughes, Everett C. 1943. *French Canada in Transition.* Chicago: University of Chicago Press.

Jones, R. 1967. *Community in Crisis.* Toronto: McClelland & Stewart.

Larsen, O. N. 1964. "Social Effects of Mass Communications." In *Handbook of Modern Sociology,* edited by R. E. L. Faris. Chicago: Rand McNally.

Rose, A. 1960. "The Comparative Study of Intergroup Conflict." *The Sociological Quarterly* 1 (January):57–66.

Royal Commission on Bilingualism and Biculturalism. 1965. *Preliminary Report.* Ottawa: Queen's Printer.

———. 1967. *Report of the Royal Commission on Bilingualism and Biculturalism.* Vol. 1. Ottawa: Queen's Printer.

Scott, F., and M. Oliver, eds. 1964. *Quebec States Her Case.* Toronto: Macmillan.

Sloan, T. 1965. *Quebec: The Not-so-quiet Revolution.* Toronto: Ryerson.

Social Change and Type of Marriage[1]

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The present paper is concerned with an examination of the effects of urbanization on the distribution of polygynous and monogamous arrangements. Its main object, however, is not to assess the overall magnitude of the changes exerted by urbanization along these lines, but rather to investigate how this magnitude varies with the characteristics of urban subpopulations investigated, both with their level of participation in modern structures as measured by length of residence in urban centers, educational and occupational achievement, and with their cultural traits, as specified by ethnic origin. The interaction between these two sets of variables is not alike for males and females. It is accordingly argued that urbanization changes not only the distribution of polygynous arrangements but also the recruitment patterns of the relevant categories of actors. Thus, the significance of the contrasts between monogamy and polygyny should be higher in urban than in rural areas.

Type of marriage is deemed to vary with societal complexity (Osmond 1965, pp. 8–15). More specifically, urbanization and industrialization are expected to alter traditional familial systems in the direction of some type of conjugal household (Goode 1963, p. 1). Accordingly, in Africa, these two forms of social change should be associated with a decline in both the incidence and the intensity of polygynous marriages.[2] The present paper evaluates the validity of this proposition by examining the distribution of plural marriage among distinctive segments of the Ivory Coast.

RELATIONSHIP BETWEEN MODERNIZATION AND THE
DISTRIBUTION OF PLURAL MARRIAGE:
A LONG-TERM PERSPECTIVE

Traditionally, polygynous arrangements have prevailed among African societies where extended kin groups exert a tight control over the behavior of their individual members. Since modernization is associated with a transfer of basic societal functions from familial institutions to specialized agencies, it should also modify patterns of marriage.

First, in the Ivory Coast, as elsewhere in Africa, modernization has been accompanied by the development of a cash economy and by a corresponding increase in the mobility of economic rights (Moore 1963, p. 102). With this growing individualization of the rights held in land, extended families

[2] The incidence of polygyny can be measured by (*a*) the number of polygynists per 100 married males, (*b*) the number of married women per 100 married men.

are increasingly unable to control the behavior of their individual members and, for example, to control the fulfillment of the obligations incumbent upon the heirs of a given testator. Accordingly, there should be a decline in the incidence of traditional forms of polygyny, such as levirate.[3]

Second, economic development has accelerated rates of occupational mobility. An increasing number of adult roles are learned in the context of modern educational and economic institutions with a corresponding decrease in the significance of the socialization functions carried through familial units.[4] As a consequence, traditional values should lose their initial salience and polygyny should cease to be uniformly normative.

Further, patterns of economic development have enhanced the volume and the range of migrations toward African urban centers. Since the population of such centers grows faster than their respective labor markets, individual migrants need to be highly mobile and hence cannot support many dependents. As a result, large families, including polygynous households, may become dysfunctional.[5] In addition, the number of economic opportunities offered to married women in urban centers remains limited. Although it is still a potential symbol of success, urban polygyny remains hardly instrumental in enhancing wealth. The corresponding decline in the functions of plural marriage should be paralleled by a decrease in its incidence.

Last, as achievement succeeds ascription as a mechanism for placement in occupational structures, familial actors experience new anxieties and frustrations, which should induce changes in familial functions. Acting as mechanisms of tension management, families should primarily mediate the release of emotions and strains accompanying participation in more specific economic and social structures (Pitts 1961, pp. 712–13). Polygynous marriages hardly facilitate the new style of familial interaction. Indeed, this new style requires (1) the number of familial actors to remain limited and (2) mate selection to be governed by principles of social homogamy.[6]

[3] I.e., the obligation to marry the wife (or wives) of the deceased person.

[4] Indeed, there has been a decrease in the proportion of individuals engaged in subsistence agriculture and a simultaneous increase in the level of school enrollments. Both trends have been associated with a decline in the importance of the occupational and cognitive socialization functions of familiar groups.

[5] Of course, it can be argued that, at least in the short run, polygyny is functional by enabling the urban dweller to maintain contact with his village of origin, to keep one of his wives on the land, and, hence, to participate in both an urban and a rural economy. This assumption is upheld, and it has been suggested that whereas only 5 percent of the "first order" wives, mostly monogamous, live outside of town, this characterizes about 15 percent of junior co-wives (see Brass et al. 1968, p. 223).

[6] Of course these two requirements are subjected to discussion. Certain authors seem to indicate that the basic distinction between instrumental and social-emotional relations leads the triad to be a more significant social unit of interaction than the dyad (see Freilich 1964). In the experimental literature, it is also often proposed that the variety of emotional resources of a group (and hence its size) maximizes its cohesiveness. For a review of the equivocal evidences on this first point see chaps. 9 and 10 in Hare, Borgatta, and Bales (1965). For a definition of the functions and of the dimensions of homogamy

Due to the scarcity of eligible women in African urban areas, polygynous arrangements entail increased contrasts in the age, ethnic, and social characteristics of conjugal partners. Thus, plural marriage is likely to satisfy only one type of complementary need pattern (father-daughter or Pygmalion model) which does not necessarily correspond to the diversified and equalitarian demands of urban actors.

THE DIFFERENTIAL RATES OF "NUCLEARIZATION" OF FAMILIAL INSTITUTIONS IN CONTEMPORARY AFRICA

Even if we assume that African polygyny is doomed to disappear, it is still necessary to evaluate the rate of decline of this institution and to determine, correspondingly, the sequence in which various African subgroups will forego plural marriage. We propose that this sequence is a function of (A) the erosive power of urbanization and modernization, and (B) the antecedent social structures from which populations originate.

A. CONFLICTING HYPOTHESES REGARDING THE EROSIVE POWER OF URBANIZATION

Given the fact that plural marriage is traditionally a privilege attached to age and seniority, there are two conflicting hypotheses regarding the effects exerted by urbanization upon its distribution. According to one hypothesis, polygyny should decline as one moves from the least to the most modernized segments of the population. Participation in the most economically and socially rewarding occupations, the modern sector of the economy, selectively characterizes individuals with a primary or post-primary education and, therefore, individuals derived from those ethnic and socioeconomic groups already exposed to modernizing influences (Clignet and Foster 1966a, 1966b). Persons gaining access to new means and resources are expected to acquire simultaneously new ends and to aspire to a Western familial life style.[7]

According to a second hypothesis, however, the relationship between modernization and type of marriage should be curvilinear. Monogamy should characterize only new immigrants into urban places and individuals placed at the bottom of the modern occupational hierarchy (unskilled manual workers). Polygyny would be too costly an institution for this subpopulation in its new circumstances. Males enjoy limited resources while females are almost entirely barred from the labor market.

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and for a review of the theory of complementary needs see Winch (1964, part 6). The problem remains, however, to decide whether complementarity of psychological needs necessarily presupposes homogamy. In fact, it can be argued that the Pygmalion model of complementarity will operate best when reinforced by a significant age difference between the two partners.

[7] Monogamy, in this new context, becomes a rewarding end by itself in facilitating upward mobility and enhancing standards of life. For a full discussion of the new alternatives open to individuals, see Shevky and Bell (1955, p. 11).

Alternatively, the incidence of polygyny should be highest among both the most traditional and the most modernized individuals. Among the most traditional subsistence farmers, petty traders, and tribal leaders, rewards are still distributed along age lines and there are few alternative choices for familial life style. Elders continue to favor traditional amenities, including plural marriage; indeed polygyny is often instrumental in the attainment of their resources. Having more resources, the most modernized segments of the population have also more choices with regard to life style. They are nevertheless likely to maintain polygynous arrangements, insofar as their recruitment reflects the influence of age and seniority, and hence, the continuity of traditional orientations.[8]

In summary, the second hypothesis implies a clear distinction between modernization of means and modernization of ends (as suggested by Moore and Feldman 1960; and Aron 1967). Whereas the first hypothesis assumes that matrimonial status is mainly influenced by the origin of the resources allocated to the individual and by the amount of exposure to modern values, the second hypothesis views matrimonial status as merely determined by the amount of these resources. By the first hypothesis, the erosive power of modernization is deemed to have permanent and regularly increasing effects. According to the second hypothesis, this erosive power is perceived as temporary and selective.

B. CONFLICTING HYPOTHESES REGARDING THE VULNERABILITY
OF ANTECEDENT SOCIAL STRUCTURES

Changes in the incidence of plural marriage depend upon both the intensity of modernizing forces and the vulnerability of traditional polygynous arrangements. In turn, variations in the vulnerability of these arrangements reflect variations in: (1) Initial degree of social integration. African peoples enjoy differing degrees of political, social, and religious cohesiveness and exert, therefore, uneven pressures toward conformity upon their individual members. (2) Initial salience of plural marriage. Initially, the incidence of polygyny varies along ethnic lines, and this incidence is high-

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[8] In the early stages of colonization, it was undoubtedly the most marginal and the most deprived individuals who were pushed into educational institutions and were obliged to enter into the new occupations imposed by colonial authorities. In the Ivory Coast, as elsewhere in Africa, the first individuals to attend schools were the sons of slaves or of the junior segments of familial organizations. Traditional leaders perceived the learning of a ruling role as incompatible with the learning of Western specific skills (for a discussion of the relationships between schooling and traditional structures, see Foster 1964). This pattern disappeared later. In fact, our data suggest that in the Ivory Coast of today correlation between age and access to the top modern occupations is hardly negative; in Abidjan the proportion of males engaged in managerial activities or acting as industrialists is positively associated with age—no less than two-thirds of these persons are over forty years of age. Among wage earners, no less than 28 percent of technicians and supervisory personnel belong to this age group, as against only 20 percent of the skilled white-collar workers and 16 percent of their unskilled counterparts. Trends among manual wage earners are similar, and three-quarters of the skilled are under age forty as against no less than 90 percent of the unskilled.

est among African societies which follow virilocal rules of residence, allocate significant economic functions to women, and/or have a system of privileges transmitted along hereditary lines (Clignet in preparation). (3) The initial functions performed by plural marriage. Traditional polygyny may be perceived as a source or as a result of wealth or as both.

The problem remains to assess the effect of such variations upon present matrimonial choices. One can argue that rates of innovation in matrimonial behavior will be maximal among peoples where demands imposed initially upon familial actors are consistent with the requirements imposed by urbanization.[9] Yet, one can also expect these rates of innovation to be maximal whenever and wherever traditional and modern demands are perceived as mutually exclusive by migrants.

In effect, these two hypotheses reflect conflicting views on recruitment patterns of urban migrants. In the first case, the majority of urban dwellers are expected to come from the mainstream of peoples whose traditional life style favors rapid and easy adaptation to new conditions. In the second case, one expects this majority to originate from marginal segments of ethnic groups whose traditional organization is least compatible with participation in modernizing structures. These marginal segments have indeed the most to gain from an urban experience.

These hypotheses also reflect conflicting views on processes of familial innovation. In the first case, one assumes that the first urbanized individuals to adopt monogamy are likely to belong to peoples in which polygyny has never been a prime norm, has always involved limited segments of the population, and has served few functions. In the second case, one assumes conversely that the first urban dwellers to remain monogamous are those whose adaptation to an urban life style has necessitated a thoroughgoing transformation of norms and values. Such individuals tend to be derived from peoples where polygyny was initially highly normative, frequent, and served a variety of purposes.

In short, the first hypothesis exclusively explains familial innovations in terms of the dominant traits of antecedent social structures while the second hypothesis attaches equal importance to the position occupied by individuals within such structures.

The vulnerability of traditional polygyny to modernizing forces depends also upon distance between the places of origin and of destination of migrants. It can be argued, however, that the cohesiveness of traditional groupings and therefore the normative character of plural marriage decreases with distance of migration. Yet, distance may also lead ethnic groups to remain "encapsulated" within the urban context and maintain the dominant features of their traditional organization (see Mayer 1961). Finally, this vulnerability depends on the relative isolation of peoples tested in the urban environment. The more residentially segregated they

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[9] Thus, it can be argued that the risks and difficulties attached to the pursuit of animals are symbolically equivalent to the pursuit of industrial occupations. Hunters should therefore be particularly prone to adapt easily to an urban style of life (see Nimkoff and Middleton 1960).

are, the less exposed they are to new norms and values and the more their traditional organization will remain untouched.

THE CHOICE OF A TESTING GROUND

We have presented two pairs of competing hypotheses regarding the effects of modernizing forces on the incidence and the intensity of plural marriage. The testing of these hypotheses is possible in a country where there are marked variations: (a) in the relative exposure of subpopulations to modernizing forces and (b) in the traditional organization of its various ethnic components.

The Ivory Coast satisfies both requirements. Economic and social changes came first and have been most striking in the eastern part of the coastal zone. In fact, there are marked variations in the educational and occupational profiles of the various Ivory Coast subregions.[10] There are also contrasts in educational, occupational, and monetary resources among populations living in urban centers with differing sizes and functions or living in distinct neighborhoods of each city.

In addition, there are marked differences in the traditional organization of eastern and western ethnic groups. The first set of peoples (including the Ebrie, the Adioukrou-Alladien cluster, and the Baoule) have a complex political organization, associated with a limitation of the domestic power invested in elders. Further, the matrilineal organization of these peoples (a) induces potential conflicts between the male members of a kin group and their male affines, (b) reduces the degree of social absorption of married women, and (c) limits incentives to contract plural marriage. In contrast, western peoples (including the Bete and the Malinke) have a gerontocratic social organization which reinforces the domestic power of elders (Paulme. 1962; Kobben 1956). In addition they are patrilineal, and married women must perform a variety of obligations, particularly in the economic sphere.[11] Accordingly, the incidence of plural marriage is initially higher among these peoples than among their eastern counterparts.[12]

[10] In 1965, school enrollments at the primary level varied from over 75 percent in the southeastern sections of the country to less than 15 percent in the northwest. Similarly, there were marked discrepancies in the organization of farming; the number of foreign unskilled agricultural laborers varied between 80,000 for the eastern parts and 800 for the region of Odienne. At the same time, there were also variations in the relative importance of familiar sharecroppers used by farmers; this group represented only 11 per- cent of the active males in the east but two-thirds of that of the north. For a full discussion, see *Côte d'Ivoire* (1967).

[11] Contrasts between the differential effects of a matrilineal and a patrilineal organization on the incidence of plural marriage are derived from Schneider (1961). The concept of social absorption is borrowed from Fallers (1957).

[12] Another valid reason for investigating the Ivory Coast lies in the fact that the government has recently decided to issue a new civil code and to abolish polygynous institutions. Many congressmen and high officials are indeed convinced that the modernization of an African country requires drastic changes in the organization of domestic groups and in the familial status allocated to individual actors. But can innovations be brought forth by legal measures? Have these innovations better chances to be generalized when they

The testing of our two sets of competing hypotheses rests upon two distinctive strategies. First, we will compare the distribution of polygynous arrangements among cities of varying size. In the Ivory Coast, all urban centers were founded by Europeans, and their size reflects their relative exposure to modernizing forces. Since we assume plural marriage to be affected both by modernizing forces and cultural factors, we will compare the distributions of polygynous arrangements in Ivory Coast cities with their respective hinterlands.[13]

Yet the size of an urban center is only a gross indicator of its modernity. Hence we examine also variations in the distribution of plural marriage along ethnic and socioeconomic lines within the capital city, Abidjan. Differences among socioeconomic groups should reflect the influence exerted by exposure to modernizing forces, while differences among ethnic groups should be indicative of the role played by antecedent social structures.[14] Ecological correlations are used to assess the association between socio-economic factors and polygyny. An inspection of cross tabulations involving individual responses will enable us to evaluate the effects of antecedent social structures and of their interaction with modernizing forces.

RESULTS

A. COMPARISONS BETWEEN CITIES BY VARYING SIZE

An inspection of table 1 shows that correlation between city size and proportions of males polygynously married is limited.[15] Further, and with

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are initially most characteristic of the lowest segments of the population or when they prevail first among upper strata? Should the legal measures concerned with innovation be assorted with positive or negative reinforcements in order to have a maximal impact? It may very well be that laws regulating familial relations can sanction only the actual practices of the majority of citizens. An evaluation of the overall effects of modernization on type of marriage should enable us to assess whether the new law will be effective.

[13] For example, see *Côte d'Ivoire* (1967); *Supplément Trimestriel du Bulletin* (1966); and *Etude socio-économique* (1964).

[14] This second strategy is particularly appropriate to the pursuit of our objectives in view of the fact that the distribution of cities by size in the Ivory Coast is primate in nature and urban populations are therefore concentrated in one single urban center (for a discussion of primate distribution, see Berry 1961, pp. 573–88). Data used in the context of this second analysis are derived from the previously unpublished tapes of the Abidjan census of 1963. We are indebted to the Ivory Coast government for these tapes. Their use has required (a) transformation to BCD form, (b) extensive recoding to eliminate alphabetic codes, and (c) a complex recoding of categories in order to eliminate equivocality. For example, no distinction was originally made between codes for senior co-wives and single spouses. The census is a sample survey of one-fifth of the households included in Districts 20–89, predominantly populated by Africans, and of one-tenth of the households in Districts 00–16, where Europeans are in the majority. Cross tabulations used in the present study involve only African respondents derived from the first set of districts. In its present form, the tape is obtainable from the Center for Metropolitan Studies, Northwestern University.

[15] We have rejected here the classical indicator of polygyny (number of married women per 100 married males) for two reasons. First, to be valid this indicator necessitates a

the exception of the southeast region of the country, the incidence of polygyny does not appear to be lower in urban than in rural areas. It is more closely associated with the location than with the size of urban centers, and the effect of location in this respect suggests that the relationship between modernization and type of marriage is not independent of cultural factors. Moreover, the intensity of polygyny tends to be higher in cities than in their hinterlands. In the present African context, modernization may accentuate existing systems of stratification; many men use the resources derived from their participation in urban structures for acquiring additional wives and affirming the preeminent position that traditional standards enable them to claim.

TABLE 1

INCIDENCE AND INTENSITY OF POLYGYNY IN IVORY COAST CITIES
AND THEIR RESPECTIVE HINTERLANDS*

CITY (i)	SIZE (ii)	DATE OF CENSUS (iii)	LOCATION (iv)	INCIDENCE OF PLURAL† MARRIAGE (v) (%)		INTENSITY OF PLURAL‡ MARRIAGE (vi) (%)	
				Cities	Hinter-lands	Cities	Hinter-lands
Odienne.......	10,000	1966	Northwest	39	31	41	29
Agboville......	12,292	1957	South	21	22	24	17
Daloa.........	18,140	1961	Center west	34	33	39	30
Gagnoa........	19,539	1961	Center west	32	32	28	28
Grand Bassam..	20,000	1963	Southeast	18	29	17	17
Korhogo.......	20,879	1968	North	27	31	44	22
Man..........	22,944	1961	West	37	37	39	37
Bouake........	55,000	1960	Center	27	19	22	10
Abidjan........	246,000	1963	South	15	29	14	17

* For an examination of the sources of the information presented here, see footnote 22.
† Defined as the number of polygynous males per 100 married men.
‡ Defined as the proportion of polygynous males with more than two wives.

In brief, table 1 casts some doubt on the hypothesis according to which increased exposure to modernizing forces is conducive to an immediate decline in the incidence and intensity of plural marriage. Modernization of the means used by urban populations is not necessarily coterminous

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sex ratio of 100 and an even representation of men and women in the universe where the measures of polygyny are taken. This condition is not fulfilled in urban areas, where, in addition, sex ratio varies along ethnic lines. As a result, the incidence of polygyny, as measured by this indicator, is often misleading. For example, it appears to be greater for the urbanized Baoule than for their Bete counterparts (175 versus 123), but this observation only reflects the greater migratory movement of the females from the former ethnic group. Second, this indicator is valid only insofar as males and females hold equally neutral attitudes toward matrimonial status. This neutrality cannot be taken for granted, and the use of this indicator would reveal that certain segments of the U.S. population are polygynous.

with modernization of their ends, that is, with a nuclearization of familial units. At the same time, regional variations in the distribution of urban polygyny support the hypothesis that the decline of polygyny is conditioned by antecedent social structures.

B. COMPARISONS AMONG ETHNIC AND SOCIOECONOMIC
SUBPOPULATIONS OF THE CAPITAL CITY

1. The importance of demographic factors. The fast growth of Abidjan implies a large volume of migrations and hence: (a) A high sex ratio. Providing that mate selection takes place in Abidjan itself, a high sex ratio should diminish the incidence of poylgyny; our analysis shows a weak negative correlation with proportions of polygynist males across census tracts ($-.14$). Over time, the sex ratio of Abidjan has, however, declined, and this decline might facilitate the persistence of polygynous arrangements.[16] (b) A high proportion of single males. Since these are younger men, their number should not necessarily lower the incidence of plural marriage. Correlation between the proportions of single and polygynous males across census tracts is weak (.05). Over time, the relative number of single men in Abidjan has declined, which might limit the persistence of plural marriage. (c) A low proportion of single women. The number of single women present in Abidjan reflects their lack of geographic mobility and their ability to break down limitations to which they are traditionally subjected. Correlation between the proportions of single women and polygynous males across census tracts is accordingly negative ($-.18$). Over time, the number of single women is likely to increase, while the selectivity of their recruitment should diminish. Correspondingly, the resistance of single women to polygynous marriages might decline and there could be a reversal in the direction of the association between proportions of polygynous males and of single women.

2. The influence of exposure to modernizing forces. Urban, educational, and occupational experiences are used here as indicators of exposure to modernizing forces. Ecological correlations between the incidence of plural marriage and these various indicators were computed for the entire city, for subareas characterized by maximal social rank (i.e., by highest educational and occupational scores), and for subareas characterized by minimal social rank[17] (see table 2). First, all correlations are low, which indicates that modernizing forces exert no linear influence on plural marriage. Also,

[16] These results have been obtained from an analysis analogous to that suggested by Shevky and Bell (1955). We have considered here the 300 basic subareas of Abidjan, having a population large enough to support this type of analysis.

[17] Social rank scores are obtained by averaging the standardized proportions of adult individuals with a primary or post-primary education on the one hand, and those engaged in non-manual occupations on the other. Having normalized the distribution of scores on a continuum between 0 and 100, we have retained the forty-seven census tracts with the lowest scores and the forty-seven tracts with the highest scores. For a discussion of the method by which this normalization is made see Shevky and Bell (1955, p. 118). See also Clignet and Sween (1969).

as we will demonstrate in later pages, the low value of the observed correlations results from intervening ethnic variables.

Second, the direction of the association between social rank and incidence of polygyny seems to uphold the validity of the functionalist hypothesis; namely that the persistence of polygyny depends more on the magnitude than on the origin of the resources allocated to the males. In contrast, the

TABLE 2

ECOLOGICAL CORRELATIONS OF SOCIAL RANK AND
MIGRANT STATUS WITH PLURAL MARRIAGE

CHARACTERISTIC	ENTIRE CITY (N =300)	HIGH SOCIAL RANK AREAS (N =47)	LOW SOCIAL RANK AREAS (N =47)
Indicators of Social Rank			
Males:			
Education (% individuals with a primary education and more).	.010	.014	−.034
Occupation (% individuals engaged in nonmanual occupations).....................	.095	.084	.026
Public employment............	.155	.113	.220
Ownership..................	.013	−.098	−.052
Females:			
Education (% individuals with a primary education and more).	−.109	−.234	.057
Occupation (% individuals engaged in nonmanual occupations).....................	.060	.037	−.137
Public employment............	−.014	−.003	.043
Indicators of Migrant Status			
Length of residence (% migrants with 10 years or more of residence in Abidjan)...........	−.048	.008	−.159
Nonmigrant males (% males born in Abidjan)...............	−.108	.155	−.263
Nonmigrant females (% females born in Abidjan)............	−.111	.103	−.271
Nonmigrant females (% females born in Ivory Coast)........	−.050	−.087	−.296

NOTE.—Information for 300 subareas of Abidjan (1963).

proportions of women entering polygynous marriages seem to decrease with their exposure to social change, as measured by their education, their participation in government agencies, and the length of their residence in Abidjan. Thus, the effects of social change on the matrimonial status of the two sexes are opposite.

Third, increase in social rank is apparently associated with: (a) Decreases in constraints upon matrimonial choice. Among populations of low social rank, polygynous aspirations can only be fulfilled after the satisfaction of

more basic needs. Whereas ecological correlations between plural marriage and educational, occupational, or urban experiences are negative or weak among low social rank populations, these correlations are positive or tend to be higher among subareas with high social rank. (b) Variations in the purposes served by plural marriage. Among low social rank areas, the correlation between proportions of polygynist males and of active women is positive (.17), but is negative for high social ranking areas (−.31). In the first instance, polygynous males tend to have economically active wives. These additional wives are still additional assets, but in the second situation they are only symbols of the status achieved by their husband and are additional liabilities. (c) Changes in value systems. Correlation between the proportions of polygynous males and of civil servants declines as one moves away from low social rank areas. In the first sort of area, civil servants have higher resources than the population at large but have maintained traditional familial values and orientations. Among the latter subpopulations, individuals employed by the government represent a minority of highly educated individuals who have adopted European norms and aspirations.

3. The influence of antecedent social structures. We now turn our attention to an evaluation of the assumptions concerning the influence of antecedent social structures upon the distribution of polygyny within urban environments (see table 3). In rural areas, the incidence of polygyny is higher among patrilineal peoples (such as the Bete or Malinke) than among matrilineal societies (such as the Alladien, the Ebrie, or the Baoule).[18]

Although urbanization is uniformly accompanied by a decline in the incidence of polygyny, urban-rural contrasts in the distribution of polygyny are not of the same magnitude for every ethnic group. Thus, the incidence of plural marriage declines more markedly among the urbanized Malinke than their Ebrie or Adioukrou counterparts. Malinke migrants whose natural habitat is located farther away from the capital city have a higher sex ratio and may face more difficulties to maintain polygynous arrangements. Yet, urban-rural differentials in the distribution of polygyny are quite alike for the Baoule and the Bete in spite of their differing types of descent and patterns of female migration.

Although the intensity of polygyny is uniformly lower in Abidjan than in rural areas, the extent of this decline again varies along ethnic lines; it is particularly marked among the Ebrie and the Adioukrou, whose global exposure to modernizing forces is maximal. In their case, urbanization is definitely associated with an erosion of traditional status hierarchies and with a decline in the significance attached to the number of wives as an indicator of social position. In short, the persistence or the decline of plural

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[18] The norms pertaining to age of women at marriage are also an important factor in the incidence of polygyny. Polygyny is generally higher among ethnic groups who favor early marriage. Thus, in the hinterland, 63 percent of the Baoule married women were married before seventeen years of age, against 67 percent of their Bete counterparts. But among the Malinke of Odienne, the corresponding proportion exceeds 79 percent (see *Côte d'Ivoire* 1967, p. 118).

TABLE 3

ETHNIC DISTRIBUTIONS OF PLURAL MARRIAGE IN RURAL AREAS AND IN ABIDJAN

Ethnic Group	Type of Descent	Geographic Location	Population*		Sex Ratio†		Intensity of Plural Marriage‡ (%)		Incidence of Plural Marriage§ (%)	
			Hinterland‖	Abidjan#	Hinterland‖	Abidjan#	Hinterland‖	Abidjan#	Hinterland‖	Abidjan#
Ebrie	Matrilineal	Southeast	105,000	10,545	99	110	18	7	22	14
Adioukrou	Matrilineal					139		6		16
Alladien	Matrilineal			5,270						
Baoule	Matrilineal	Center	684,000	15,495	95	76	18	11	25	14
Bete	Patrilineal	West	280,000	9,855	97	130	32	17	38	19
Malinke	Patrilineal	North	980,000	53,190	100	183	24	14	27	14
Voltaic**	Patrilineal									
African Foreigners††	Mixed	....	n.a.	16,000	n.a.‡‡	117	n.a.‡‡	12	n.a.‡‡	17
Total population......	....	....	3,290,000	245,000	101	137	26	14	29	14

* Derived from Côte d'Ivoire 1965, p. 188, table 1.
† Computed for the adult population only.
‡ As measured by the proportion of men polygynously married.
§ As measured by the proportion of polygynous men with more than two wives.
# Derived from Supplément Trimestriel du Bulletin Mensuel de Statistiques, although ethnic data are treated by aggregates and do not give specific information about the groups studied here.
# Derived from the previously unpublished tapes of the Abidjan census 1963 (Districts 20–89).
** Include Senofo and Lobi.
†† Include peoples from Ghana, Nigeria, Dahomey, and generally from countries located south of the Ivory Coast.
‡‡ Figures not ascertained.

marriage of Abidjan is affected by specific cultural factors (see table 4).

The influence of these cultural factors is evidenced through an examination of the association between age and matrimonial status among the Abidjan male adult population. To be sure, older male residents of the capital city are uniformly more likely than their junior counterparts to be polygynous. Yet the intensity and the direction of the effects exerted by age in this respect are not alike for all ethnic groups considered here.

TABLE 4

PROPORTIONS OF ABIDJAN MALE RESIDENTS WHO ARE POLYGYNOUSLY
MARRIED, BY ETHNIC AFFILIATIONS AND AGE CHARACTERISTICS*

(%)

	Ebrie	Adiou-krou	Baoule	Bete	Malinke-Voltaic	African Foreign-ers	Total Popula-tion Abidjan
Age:							
20–29........	5	8	6	12	5	9	7
30–39........	10	18	16	21	13	20	15
40–44........	17	18	24	25	22	28	23
45–49........	20	29	21	33	26	29	25
Above 50.....	9	35	9	38	28	19	22
Total married population.....	(649)	(293)	(592)	(532)	(3121)	(853)	(7623)
χ^2..........	31.7	32.2	41.4	32.8	210.1	51.6	....
Level of significance†.	.01	.01	.01	.01	.001	.001	....

* Computed from the previously unpublished tapes of the Abidjan census 1963 (Districts 20–89).

† The χ^2 computation for each one of the six ethnic groups presented here involves eight age categories (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, above 55) and three categories of matrimonial status (monogamous, polygynous with two wives, polygynous with three wives), yielding 14 d.f. Levels of significance were established on the basis of these tables. However, only the proportions of polygynous males in each ethnic group are presented above.

Minimal for younger age groups, interethnic differences increase as one moves toward older ages; for example, 70 percent of the Bete forty-five years old and over are polygynous against only 30 percent of the Baoule males of similar age. These ethnic contrasts appear to be somewhat parallel to those observed in the hinterland.[19] Yet, they do not seem to reflect

[19] In the rural sections of the north, the gradient of the association between age and plural marriage is very steep. The number of married women per 100 men does not exceed 115 for the individuals thirty-five years of age but reaches 150 among persons fifty-five years old. In Korhogo, the corresponding figures are 131 and 190. In the western region, this number varies between 125 and 150 for the equivalent age groups, but it varies between 144 and 188 in the city of Man. Urbanization minimizes the preeminence of elders and facilitates the access of younger cohorts to plural marriage. In southern cities, the gradient of the association between age and polygyny is far less steep. In Dabou, Bassam, and Abidjan, the index of polygyny varies between 115 for the thirty-five-year age group and 130 for those who are fifty-five years old. Further, especially in Abidjan, there is a decline of this index for older groups (see *Côte d'Ivoire* 1967, figs. 21 and 22).

variations in the sex ratio or in the migration distance of the various groups present in Abidjan. Thus, relationships between age and plural marriage are alike for the Adioukrou and the Bete, although these two groups have differing traditional organizations, are not located at similar distance from the capital city, and do not reach similar social rank scores. In short, association between age and plural marriage remains equivocal. Does the higher incidence of plural marriage among certain older groups reflect the persistence of the privileges attached to seniority or does it alternatively result from the lower exposure of older generations to European norms and values? Younger peoples are also more modern and hence more likely to abandon traditional symbols of success and status, including plural marriage.

An examination of the age distribution of women with differing matrimonial status gives us a partial answer to this query (see table 5). Thus, in Abidjan both junior co-wives in polygynous households and single spouses are recruited from younger age groups. In 1963, monogamy was still temporary; as women got older, their husbands were likely to have more resources and to marry one or several additional co-wives.[20]

Yet, differences in the ages of monogamous spouses, senior, and junior co-wives vary along ethnic lines. Largest for the Bete or for the Malinke, differences are slight among the Ebrie. Recruitment into Ebrie monogamous or polygynous families seems to be independent of the age of the woman investigated. Among this particular people, monogamy is apparently no longer a temporary matrimonial condition but rather the result of a deliberate choice. The problem remains to identify the determinants of such a choice.

We have argued that the persistence of ethnic differences in the distribution of plural marriage among urbanized populations reflects specific aspects of traditional structures. This point is further substantiated by the lack of association between religious affiliation and the incidence of plural marriage within ethnic categories.[21] Although the incidence of plural mar-

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[20] The problem remains to determine whether the large age differentials among spouses of a differing rank order impedes or facilitates domestic conflicts. On the one hand, it can be argued that such differentials remove competitive feelings among co-wives and introduce some complementarity in domestic roles. Alternatively, it might be suggested that such differentials introduce inconsistencies in roles and accentuate jealousies and rivalries among members of the familial group. This second argument can be derived from the theory expressed by Aberle et al. (1963). Substantial age differences between co-wives induce incompatibilities and conflicts between their roles; antagonisms are enhanced by similarity in the ages of the newest spouse and of the children of the senior co-wife.

[21] In contrast to Abidjan, results obtained in Dakar in 1955 show significant differences between the matrimonial status of males with differing religious affiliations. In Dakar, no less than 96 percent of Christians but only 80 percent of Muslims are monogamous. Further, there are marked variations among Muslim sects; for instance, the *Layenne* are more frequently polygynist than the *Quadrienne* (29 percent against 14 percent). (See *Recensement Demographique de Dakar* 1958, p. 78.) Thus, it is not sufficient to analyze the effects of religious influences. It is equally important to evaluate the time during which these influences have been exerted and this may explain the heavier impact of Christian values in Senegal than in the Ivory Coast.

TABLE 5

PERCENTAGE DISTRIBUTION OF AGE, SINGLE SPOUSES, SENIOR, AND JUNIOR CO-WIVES IN ABIDJAN, BY ETHNIC ORIGIN*

	Ebrie			Adioukrou			Baoule			Bete			Malinke-Voltaic			Foreigners			Total Population of Abidjan		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Age group:																					
Below 25	34	26	43	49	28	47	50	30	49	62	38	60	56	37	56	46	27	54	51	29	54
25–34	40	43	33	42	49	44	38	56	41	33	53	34	35	45	33	41	53	33	37	48	35
35–44	17	23	20	9	21	5	9	12	10	4	7	6	8	12	8	11	16	11	9	18	7
45 and above	9	8	4	...	2	4	3	2	0	1	2	0	1	6	3	2	4	2	3	5	4
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N†	(519)	(65)	(54)	(219)	(47)	(32)	(729)	(115)	(121)	(355)	(106)	(107)	(2287)	(427)	(435)	(611)	(148)	(144)	(5812)	(1152)	(1136)
χ^2	24.1			16.4			18.1			16.7			135.5			32.8					
Level of significance	N.S.			N.S.			N.S.			N.S.			.001			.05					

NOTE.—(1) = Monogamous wives; (2) = senior co-wives; (3) = junior co-wives.

* Computed from the unpublished tapes of the Abidjan census 1963 (Districts 20–89).

† The χ^2 computation for each one of the six ethnic groups presented here involves eight age categories (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55 and above) and four categories of matrimonial status (single spouses, senior co-wives, second co-wives, and other co-wives), yielding 21 d.f. Levels of significance were established on the basis of these tables.

riage tends to be lower among Catholics and Protestants, differences between these two denominational groups and Muslims or Animists are not statistically significant, except among the Malinke where the two latter religious groups are in the majority. Further, as table 6 shows, interethnic differences remain quite large when religious affiliations are held constant. In spite of a similarly low incidence of Islam among the Bete and the Baoule, the proportion of Muslim polygynous males is twice as large among the former as among the latter. Conversely, whereas 84 percent of the Bete are Catholic as against only 11 percent of the Malinke-Voltaic, the incidence of polygyny is higher among the Catholics of the former than

TABLE 6

PROPORTIONS OF ABIDJAN MALE RESIDENTS WHO ARE POLYGYNOUSLY
MARRIED BY ETHNIC AND RELIGIOUS AFFILIATIONS*

(%)

	Ebrie	Adiou-krou	Baoule	Bete	Malinke-Voltaic	African Foreign-ers	Abid-jan
Religion:							
Animist.........	†	†	13	30	13	21	17
Muslim.........	33	†	13	25	16	22	16
Catholic........	8	14	14	18	5	13	13
Protestant......	11	21	8	23	6	15	13
Harrist‡........	15	†	13	†	†	13	13
Total married population..	(673)	(302)	(609)	(1065)	(3486)	(870)	(7151)
χ^2.............	8.6	10.2	2.5	13.8	34.1	12.1	....
Level of significance§......	N.S.	N.S.	N.S.	N.S.	.001	N.S.	....

* Computed from the unpublished tapes of the Abidjan census 1963 (Districts 20–89).
† Absolute numbers too small to be analyzed.
‡ Syncretic cult: for further details, see Holas 1954.
§ The χ^2 computation for each one of the six ethnic groups presented here involves seven religious categories (Catholic, Protestant, Muslim, Animist, Harrist, others, without religion) and the already mentioned three categories of matrimonial status, yielding 12 d.f. Levels of significance were established on the basis of these tables. However, only the proportions of polygynous males in each ethnic group are presented here.

among those of the latter people. In brief, the influence exerted by religious values upon the matrimonial status of African male individuals remains limited and is probably modified by other aspects of traditional organization.

Religion exerts a greater influence on the matrimonial status of the female residents of Abidjan. Junior co-wives tend to be more frequently Animist or Muslim than senior co-wives or single spouses. Among the Bete, only 72 percent of the junior co-wives are Christian against 84 percent of the senior co-wives and 86 percent of the spouses of monogamous husbands. Among the African foreigners, the corresponding figures are 36, 41, and 51 percent, respectively. However, this profile differs somewhat from that observable among the Malinke where 13 percent of the monogamous wives

are Christian against only 4 percent of both junior and senior co-wives. Thus, in one case religion differentiates between the matrimonial rank of married women; in the other, it differentiates between the type of marriage the women enter.

In summary, this section has enabled us to partially assess the influence of the traditional social structure from which urban migrants are derived. To be sure, interethnic differences are more limited in an urban than in a rural environment. Yet, even in Abidjan, the influences of age, seniority, and religion on polygyny were seen to vary with ethnicity. It has been, however, impossible to evaluate the relative effect of: (a) the traditional political and familial organization of the peoples investigated, (b) the distance between their natural location and the capital city, and (c) their overall level of modernization.[22] It is possible that these factors interact in a specific way for each ethnic group analyzed.

4. Interaction between exposure to modernizing forces and antecedent structures. An examination of the influence exerted by urban educational and occupational experiences on the matrimonial behavior of the Abidjan male population confirms the view that the effects of modernizing forces vary along ethnic lines. Thus, although the incidence of plural marriage among males increases regularly with the amount of time spent in Abidjan (see table 7), the gradient of the association is steeper among the Bete than among the Baoule.[23] Conversely, there are no differences in this respect between the Adioukrou and the Malinke in spite of their economic, social, and political dissimilarities. Although individuals born in Abidjan are usually unlikely to be polygynously married, Ebrie and Baoule individuals born in the capital city display a higher incidence of polygyny than migrants of the same background.

The association between education and plural marriage is limited and curvilinear.[24] Up to a certain point, formal schooling appears to mediate new economic opportunities without changing familial aspirations. Beyond this point, both occupational and familial orientations are altered.[25] Yet, there are marked ethnic variations (see table 8). Indeed, interethnic dif-

[22] This sort of analysis has been made impossible by the fact that the present technology limits the number of dimensions to be examined in cross tabulations.

[23] Of course, it should be remembered that the amount of time spent in Abidjan varies both with age and ethnic origin.

[24] Divergences between the results presented in tables 2 and 8 are noteworthy. The first type of analysis deals with aggregates whereas the second deals with individual cases. For a discussion of the problems raised by the use of aggregates see Selvin (1961) and Robinson (1961, pp. 132–50).

[25] There is unfortunately no available account of the motivations currently underlying polygyny in the Ivory Coast. In Senegal, an examination of attitudes toward plural marriage shows that positive orientations are more frequent among men than among women, more frequent among illiterates than among persons having attended school. Among the latter, polygyny is most frequently justified by incorrect perceptions concerning sex ratio and by the notion that men should teach as many women as possible. Negative attitudes among both educated men and women result from the fact that plural marriage prevents intense emotional exchanges between partners (see Thore 1964).

TABLE 7

PROPORTIONS OF ABIDJAN MALE RESIDENTS WHO ARE POLYGYNOUSLY MARRIED, BY ETHNIC ORIGIN AND LENGTH OF RESIDENCE IN ABIDJAN*

(%)

	Ebrie	Adioukrou	Baoule	Bete	Malinke-Voltaic	African Foreigners	Abidjan
Length of residence:							
Less than 1 year	4	7	11	9	8	6	8
1 to 5 years...	9	16	9	18	11	15	13
6 to 10 years..	10	11	9	15	15	17	12
More than 10 years.......	10	24	18	26	21	25	21
Born in Abidjan	11	11	26	19	12	7	11
Total married population.....	(674)	(300)	(607)	(542)	(3121)	(868)	(7654)
χ^2..........	4.5	18.0	18.1	28.0	90.3	36.8	....
Level of sigficance†...	N.S.	N.S.	N.S.	.05	.001	.01	....

* Computed from the previously unpublished tapes of the Abidjan census 1963 (Districts 20–89).

† The χ^2 computation for each one of the six ethnic groups presented here involves nine categories of length of residence (less than 1 year, 1–2 years, 2–4 years, 4–5 years, 5–7 years, 8–10 years, 11–20 years, more than 20 years, and born in Abidjan) and the three matrimonial categories already mentioned, yielding 16 d.f. Levels of significance were established on the basis of these tables. However, only the proportions of polygynous males in each ethnic group are presented here.

TABLE 8

PROPORTIONS OF ABIDJAN MALE RESIDENTS WHO ARE POLYGYNOUSLY MARRIED BY ETHNIC AND EDUCATIONAL CHARACTERISTICS*

(%)

	Ebrie	Adioukrou	Baoule	Bete	Malinke-Voltaic	African Foreigners	Abidjan
Level of education:							
Do not speak French	6	13	13	4	10	12	10
Speak French......	10	16	13	15	14	22	15
Some primary studies.............	13	14	13	25	17	19	18
Completed primary studies.........	8	21	18.	20	20	8	15
Went beyond primary studies	11	7	7	25	21	18	13
Total married population....	(674)	(301)	(610)	(540)	(3111)	(866)	(7685)
χ^2..............	6.9	21.8	25.1	21.8	24.2	26.9	....
Level of significance†........	N.S.	.10	.05	.10	.05	.02	....

* Computed from the unpublished tapes of the Abidjan census 1963 (Districts 20–89).

† The χ^2 computation for each one of the six ethnic groups presented here involves eight educational categories (post-primary experiences include groups of individuals having (1) not completed their first cycles of post-primary studies, (2) having achieved this cycle, (3) having completed their secondary studies, and (4) having gone to the university) and the three matrimonial categories already mentioned, yielding 14 d.f. Levels of significance were established on the basis of these tables. However, only the proportions of polygynous males in each ethnic group are presented here.

ferences, minimal among individuals who have no education, are greatest among highest educational categories. A higher level of education widens choices in life style and enhances the significance of ethnic differentiation; it tends to favor polygyny among patrilineal societies (Bete, Malinke) but has an opposite effect on matrilineal peoples (Adioukrou, Baoule).

Table 9 confirms the view that the incidence of plural marriage is more closely associated with variations in the resources acquired by occupational groups than with variations in the respective value systems. Both for the Ivory Coast as a whole and for Abidjan, the incidence of polygyny follows a curvilinear pattern and is minimal among manual workers whose exposure to modernizing forces, while exceeding that of farmers and of artisans, is still more limited than that of individuals engaged in non-manual occupations. Further, both among manual and white-collar workers, interethnic differences increase with skill level. Like educational experience, higher occupational status widens the choices in life style but does not necessarily reduce the influence of cultural factors. As indicated earlier, the extent to which modernization of means and modernization of ends are coterminous varies along ethnic lines.

Yet, the persistence of polygyny in African urban environments depends not only upon the type of experience acquired by male migrants but also upon the response of females to the challenges of an urban society. A long exposure of African women to the urban milieu does not necessarily predispose them to monogamy. Among all ethnic groups, senior co-wives are more likely than either their junior counterparts or single spouses to have spent more than ten years in the capital city. Yet once again, there are ethnic cleavages in this respect. Length of urban experience is an appropriate predictor of the matrimonial rank of Adioukrou, Baoule, and Bete women but predicts best the type of marriage entered into by Malinke-Voltaic or other foreign women.[26] The matrimonial behavior of women born in Abidjan also varies along ethnic lines. Both Ebrie and Bete women born in Abidjan are most likely to be monogamous. Conversely Adioukrou and Malinke women born in Abidjan tend most frequently to belong to polygynous families.[27]

The effects of schooling on the matrimonial status of women are similarly differentiated. Among certain peoples, such as the Ebrie, there are no educational differences between women married to monogamous males and those married to polygynists. In contrast, a little over one-half of both Bete monogamous spouses and senior co-wives can at least speak French, against only 36 percent of the third or fourth wives of their husbands. In this particular case, the domestic power traditionally accorded to senior

[26] For example, 32 percent of Adioukrou single spouses and senior co-wives have spent more than ten years in Abidjan against only 16 percent of the junior co-wives. In contrast, only 15 percent of Malinke single spouses have lived more than ten years in that city against 27 percent of their counterparts married into polygynous families.

[27] Thus 52 percent of Ebrie single spouses born in Abidjan against 65 percent of the women are married to polygynists. For the Adioukrou, the corresponding figures are respectively 3 and 8 percent.

TABLE 9

PROPORTION OF ABIDJAN MALE RESIDENTS WHO ARE POLYGYNOUSLY MARRIED BY OCCUPATIONAL AND ETHNIC CHARACTERISTICS

	Ebrie	Adioukrou	Baoule	Bete	Malinke-Voltaic	African Foreigners	Abidjan	Hinterland
Occupational status:								
Unemployed	0	0	8	11	16	0	10	21
Farmers and fishermen	0	†	†	†	17	10	12	35
Artisans and traders	13	†	8	0	22	21	20	28
Manual workers:								
Unskilled	11	0	7	10	8	11	10 ⎫	⎫
Semi-skilled	2	13	10	22	15	17	13 ⎬	21 ⎬
Skilled	3	22	15	29	8	0	12 ⎭	⎭
White collar:								
Semi- and unskilled	0	10	11	23	19	0	13 ⎫	⎫
Skilled	6	14	6	30	27	13	18 ⎬	36 ⎬
Managerial, professionals	10	18	17	19	18	14	17	28
Military and uniformed services	29	33	22	38	27	0	29	:
Total married population (N_1)	(672)	(298)	(604)	(667)	(3093)	(862)	(7685)	:
Total married population (N_2)	(194)	(79)	(205)	(162)	(948)	(233)	(2191)	:
$\chi^2 1$	24.7	19.4	32.5	5.4	107.6	36.4	...	:
Level of significance	N.S.	N.S.	.05	N.S.	.001	.02	...	:
$\chi^2 2$	73.5	10.4	17.5	16.5	96.4	20.7	...	:
Level of significance	.001	N.S.	N.S.	N.S.	.001	N.S.	...	:

* Computed from the unpublished tapes of the Abidjan census 1963 (Districts 20–89). The figures for unemployed individuals have been obtained from the *total* number of respondents interviewed. Other figures have been obtained from a sample of one-tenth of the respondents.

† Absolute numbers too small to be analyzed.

co-wives is important enough to enhance the attractiveness of this particular position (Dunglas 1939). Indeed, a high educational level should enable senior co-wives to increase the demands that their seniority and their age entitles them to impose upon the junior spouses of their husbands. Thus both achievement and ascription appear to influence the Bete familial hierarchy. Finally, among other peoples, such as African foreigners, education introduces significant distinctions between women married into monogamous and polygynous families. In this particular case, one-third of monogamous wives can speak French, against only 21 percent of their counterparts belonging to polygynous households.

In short, we can see that an increased exposure of the female population to modernizing forces is not uniformly conducive to a decline in plural marriage. The effects of exposure have to be evaluated in terms of: (a) The sex ratio of the ethnic groups investigated. The scarcity of eligible women influences their matrimonial choices and, for example, their preference for becoming senior co-wife instead of divorcing and contracting a new monogamous marriage. (b) The discrepancy between the two sexes in exposure to modernizing forces. As such a discrepancy declines, those women who are most "modernized" may lose the attractiveness they derive from their scarcity, and hence lose their bargaining power. (c) The persistence of traditional norms regarding the feasibility of plural marriage as an indicator of the social position achieved by a male individual.

CONCLUSIONS AND SUMMARY

The aim in the present paper was to determine the degree to which modernizing forces foster the emergence of a conjugal type of nuclear family and hence are associated with a decline in the incidence of polygyny.

The two main indicators that we have used yield similar results. First, the decline of polygyny in urban centers is determined less by the size of such centers than by their locations; urban rural differentials are less sizable than contrasts between regions of the Ivory Coast. Similarly, it is not necessarily among the most "modern" residents of Abidjan that the incidence of polygyny is lowest.

This had led us to suspect that while urbanization and modernization do change the values and norms of African individuals, they influence even more markedly the individuals' resources, and enlarge their choices with regard to life style. Since the decline of polygyny results from the absence of alternative solutions as well as from the acceptance of a European familial ideology, it can reflect an absence of means as well as a change in ends. These changes in familial ends vary along ethnic lines. Thus, we have demonstrated that the magnitude of ethnic differences in the incidence of plural marriage increases with the modernization level of urban subpopulations. We have tried, unsuccessfully, to isolate the factors which may account for the variability of the choices made by ethnic groups. There is probably a specific interaction among the traditional organization, the overall involvement in modern structures, and the natural location of these various peoples.

Insofar as the persistence of polygyny may reflect the persistence of traditional values among urban residents, it is important to determine whether modernization affects both sexes alike. We have suggested that exposure to modernizing forces may differentiate married women either in terms of their matrimonial rank or in terms of the type of marriage that they have contracted. In fact, their own matrimonial choices depend upon: (a) their individual status, (b) the relative scarcity of their peers within the field of eligibles, and (c) the matrimonial aspirations of the male population.

To sum up, at least in the short term modernization affects recruitment patterns of monogamous and polygynous actors as much as the distribution of the corresponding types of marriage. So far, it has been customary to oppose monogamy and polygyny as if the requirements imposed upon the corresponding familial groups were uniformly dissimilar. Yet, as various ethnic and socioeconomic subgroups adopt distinctive attitudes about plural marriage, and as recruitment patterns of polygynous actors vary both within and without ethnic groups, this assumption should be increasingly problematic. Variations in the organization of the polygynous households themselves should be as significant as relevant contrasts between such families and their monogamous counterparts.

REFERENCES

Aberle, D., U. Bronnenfenner, E. Hess, D. Miller, D. Schneider, and J. Spuhler. 1963. "The Incest Taboo and the Mating Behavior of Animals." *American Anthropologist* 65:253–64.

Aron, Raymond. 1967. *The Industrial Society*. New York: Praeger.

Berry, B. 1961. "City Size Distribution and Economic Development," *Economic Development and Cultural Change* 9(4):573–88.

Brass, William, et al. 1968. *The Demography of Tropical Africa*. Princeton, N.J.: Princeton University Press.

Clignet, Remi, and P. Foster. 1966a. *The Fortunate Few*. Evanston, Ill.: Northwestern University Press.

———. 1966b. "Un exemple d'assimilation l'enseignement classique en Côte d'Ivoire." *Revue Française de sociologie* 7(1):32–47.

———. *Many Wives, Many Powers*. Evanston, Ill.: Northwestern University Press, in press.

Clignet, Remi and J. Sween. 1969. "Accra and Abidjan: A Comparative Analysis of the Notion of Increase in Scale." *Urban Affairs Quarterly* 4, no. 3:297–324.

Côte d' Ivoire 1965: Population études régionales: 1962–65. Synthéses. 1967. Abidjan: Ministère du Plan.

Dunglas, E. 1939. *Moeurs et coutumes des Bétés*. Paris: Larose.

Etude socio-économique de la zone urbaine d'Abidjan. 1964. Paris: Société d'Etudes et de Mathematiques Appliquées. Rapport 3.

Fallers, L. 1957. "Some Determinants of Familiar Stability in Busoga, a Reformulation of Gluckmans' Hypothesis." *Africa* 27:106–201.

Foster, P. 1964. "Status Power and Education in a Traditional Community." *School Review* 72:158–82.

Freilich, M. 1964. "The Natural Triad in Kinship and Complex Systems." *American Sociological Review* 29:529–40.

Goode, W. 1963. *World Revolution and Family Patterns*. New York: Free Press.

Hare, P., E. Borgatta, and R. Bales. 1965. *Small Groups: Studies in Social Interaction.* New York: Knopf.

Holas, B. 1954. "Bref aperçu sur les principaux cultes syncretiques de la Basse Côte d'Ivoire." *Africa* 24:55–61.

Kobben, A. 1956. *Le planteur noir* Études Eburnéennes. Abidjan: Centre Institut Français d'Afrique Noire.

Mayer, P. 1961. *Tribesmen or Townsmen.* Capetown: Oxford University Press.

Moore, W. 1963. *Social Change.* Englewood Cliffs, N.J.: Prentice-Hall.

Moore, W., and A. Feldman. 1960. *Labor Commitment and Social Change in Developing Areas.* New York: Social Science Research Council.

Nimkoff, M., and R. Middleton. 1960. "Types of Family and Types of Economy." *American Journal of Sociology* 65:215–24.

Osmond, M. 1965. "Correlates of Types of Marriage." *Social Forces* 44:8–15.

Paulme, D. 1962. *Un peuple de Côte d'Ivoire hier et aujourd'hui: les Bêtes.* Paris: Mouton.

Pitts, J. 1961. "Introduction. Part Three: Personality and the Social System." In *Theories of Society,* edited by Talcott Parsons et al. New York: Free Press.

Recensement démographique de Dakar, 1955, resultats définitifs premier fascicule. 1958. Haut Commissariat de la République Française en Afrique Occidentale Française.

Robinson, W. 1961. "Ecological Correlations and the Behavior of Individuals." In *Sociology, the Progress of a Decade,* edited by S. Lipset and N. Smelser. Englewood Cliffs, N.J.: Prentice-Hall.

Schneider, D. 1961. "Introduction: The Distinctive Features of Matrilineal Descent Groups." In *Matrilineal Kinship,* edited by D. Schneider and K. Gough. Berkeley: University of California Press.

Selvin, H. 1961. "Durkheim's Suicide and Problems of Empirical Research." In *Sociology, the Progress of a Decade,* edited by S. Lipset and N. Smelser. Englewood Cliffs, N.J.: Prentice-Hall.

Shevky, E., and W. Bell. 1955. *Social Area Analysis.* Stanford, Calif.: Stanford University Press.

Supplément Trimestriel du Bulletin Mensuel de Statisques 8, no. 7. 1966. Abidjan: Ministère des Finances.

Thore, L. 1964. "Polygamie en Afrique noire." *Revue de l'action populaire* 15:807–27.

Winch, R. 1964. *The Modern Family.* New York: Holt, Rinehart & Winston.

Commentary and Debate

JAN LOUBSER REPLIES TO ANSELM STRAUSS'S CRITICISM OF HIS REVIEW OF *DISCOVERY OF GROUNDED THEORY*

Anselm Strauss's comment on my review of his and Glaser's book is so nonspecific, devoid of intellectual content, and *ad hominem* that I find it difficult to respond to it. How does one counter a blanket charge that you misread and misinterpreted a book? If such a comment is appropriate at all, surely the burden is on the author to produce evidence in support of the allegations he makes. Although the alleged "facts" might by now be so well "grounded" for him that he assumes their validity for everyone else, they might not be so obvious to most readers.

In any event, an attempt to discredit the professional integrity and competence of a reviewer hardly clarifies any issues and does not contribute to an intelligent and civil exchange of ideas. I am prepared to defend my interpretation of the book and to discuss any substantive points Strauss may wish to raise.

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ALEX INKELES COMMENTS ON JOHN STEPHENSON'S "IS EVERYONE GOING MODERN?"

In my estimation John P. Stephenson has made a contribution to the measurement of attitudinal modernity in his paper "Is Fveryone Going Modern?" (Stephenson 1968). In the course of doing so, however, he enunciates some *principles* for guiding research on this topic which should be more critically examined, and he makes some judgments of the efforts of others—including my own[1]—which I must challenge.

Stephenson urges that in selecting the criteria for measuring modern attitudes in individuals (modernism) we should use dimensions which the community being studied defines for itself as establishing a continuum from modern to traditional. If he were content to advocate this as but one approach to measurement among others also acknowledged to be legitimate, there would be little to quarrel about. But he evidently feels the need to establish a monopoly for this particular approach. He says: "If no differentiation is made in the [local] culture between traditionalism and modernism, then movement along the dimension cannot be recognized by the participants, and the study of modernization in this cultural setting is meaningless" (Stephenson 1968, p. 268).

[1] Stephenson makes particular reference to only one of our project's publications (Smith and Inkeles 1966). He expresses himself as eager to know the logical connection between the themes we measured and our definition of modernity, but he evidently did not take the trouble to read the article we cited as presenting that connection (see Inkeles 1966).

Stephenson's statement itself is not meaningless, but it *is* scientific nonsense. It is tantamount to asserting that only the patient can decide on the proper criteria for the physician to use in deciding whether he does or does not have a particular disease. It is to say, in effect, that unless a culture accepts heightened temperature as an index of illness, and acknowledges the thermometer as an appropriate measure of temperature, it is "meaningless" to use that instrument to diagnose illness in the given culture. Impressed as I am by the wisdom of much folk medicine, I cannot see the necessity of substituting its criteria for those of medical science. Indeed, Stephenson is himself not ready to follow his own prescription. If it is really to be left to the culture to decide which are the relevant dimensions of modernism, why then did he bring in a panel of seven expert judges, five of them sociologists, to screen the statements of the local people? Such caution is probably wise. But should Stephenson not then bring his announced convictions into line with his practice?

Tests to ascertain what the people think, feel, or perceive to be the changes most relevant to judging individual modernization could certainly be a valuable component of a complete set of measures of this particular process of social change. But there will inevitably be other dimensions which the local citizens never thought of, or which are not salient to them, which a social scientist will, nevertheless, want to consider either on theoretical grounds or because he has empirical evidence from other studies to indicate they are important. Since the modernization of society is generally measured by a series of structural changes, one obvious theoretical interest is to ascertain how far attitudes and values are changing in response to the social structural transformations. An alternative sociological model would emphasize certain individual orientations as necessary elements for the functioning of a modern industrial system and would seek to establish how far a particular population was able to provide sufficient numbers of individuals with the requisite personal attributes. In either case, the attitude changes important to the sociologist might be taking place along dimensions which the local population did not conceive of as relevant to an assessment of individual modernization; which they might acknowledge to be important if questioned about them, but which are not ordinarily salient to them; or which might be salient, but could not be accurately assessed by the local citizens.

To make the point concrete, let us consider joining voluntary organizations or taking an interest in world affairs. No questions touching on these themes were included in Stephenson's set of scale items, presumably because his interviewees did not identify them as salient to the local community. To include such items would, if I read Stephenson correctly, be defined by him as "meaningless." How can we know they would be "meaningless"?

I think we can easily see how they might be quite meaningful. For one thing, Stephenson is probably confusing what is *salient* to the local population with what is *relevant* to them. The people in Shiloh did not seem spontaneously to use joining trade unions or following world news closely as

ways of judging an individual's modernity. But we do not know what they would have said if Stephenson had asked them directly: "Would such attitudes and behaviors be useful in efforts to distinguish a man with 'new ways' from those who follow the 'old ways'?" In many other researches on modernization, including our own, those judged modern on other attitudinal and behavioral criteria did more often join organizations and take a strong interest in foreign as against local news. I strongly suspect that if Stephenson had put the question he would have discovered that the people in Shiloh also consider such behavior relevant in judging whether or not a man is modern.

Whatever the local people *thought* about it, the true correlation between interest in foreign news and other components of modernism can actually be known only by including such questions in the initial set tested. Since Stephenson did not include them in his questionnaire, he cannot make his assertion on the basis of fact. We did include such items in our scales of individual modernization (OM) in six developing countries, and they are in fact strongly associated with items of the type which found their way into Stephenson's own scale of modernism in Shiloh.[2] There is every reason to assume that these questions would play the same role as good indicators of individual modernity if they had been included in the test in his community.[3]

We are clearly moving over from the question of how legitimate it is to use the social scientist's criteria of modernism to the question of what difference it makes in empirical relationships. In other words, we are moving from an evaluation of validity based on theoretical grounds to a judgment of it on empirical grounds. It follows from Stephenson's position that, if we used a scale founded *not* on the criteria of the local community, but rather based on the allegedly "meaningless" criteria of an outside social scientist, then the indigenous scale would "work" and the scale of the social science outsider would not. That is, only the indigenous scale scores would vary significantly in relation to relevant social indicators.

[2] Stephenson's scale includes items such as "The old ways are mostly best for me," rather like our question (CH-3) concerning the adoption of "new ways of doing things" in agriculture. In other respects as well, his questions parallel those used in our scales to measure themes in value areas, such as sex roles, religion, etc. It is of particular interest to note, therefore, that the type of item Stephenson used correlates with our summary scale of modernization no more strongly than the type he did *not* use. For example, the Stephenson-type item on "new ways of doing things" produced an item-to-(modernization) scale correlation averaging .273 for the six countries, while that on interest in world news yielded an average item-to-scale correlation of .294. These correlation coefficients apply to the Long Form of OM reported in table 1 in Smith and Inkeles (1966).

[3] Indeed, we have used the questions in Hazard, Kentucky, an Appalachian community I suspect is very similar to Shiloh. Furthermore, in our footnote 5 on page 357 of Smith and Inkeles we report that our student, William Lawrence, found in his sample of that community that the *structure* of attitudes in Kentucky was basically similar to that in the six developing countries. In other words, in Kentucky too, individuals who thought the "old ways" best were also less likely to join voluntary organizations or to take an interest in world over local news. Why Stephenson chose to ignore this information is not clear.

What should these social indicators be? Stephenson says "one would logically expect respondents of the more traditional scale type to be older, less educated, living farther from main roads, and in more traditional occupations" (p. 273, n. 29). These are precisely the sorts of determinants of modernism which other studies have cited, both on theoretical grounds and on the basis of empirical evidence, to validate their scales of modernity. While recognizing the high reliability of our scales, Stephenson goes on to report "the question of validity 'gnaws' at me throughout." But relief for his distress was in his very hands. The same *Sociometry* article which he quotes presents one form of our modernity scale (Short Form 3) derived by the criterion method, a method which is basically a test of validity.[4] The criteria we used—education, occupation, and residence—are much the same as those used by Stephenson (p. 273, n. 29) to validate his own scale. Furthermore, we quite explicitly describe (Smith and Inkeles 1966, p. 360) as a "test of adequacy," that is, of validity, the relation of our scales "to social indices which are generally acknowledged to be associated with modernity," and report (in n. 12) five-country average correlations of .434 with education, .179 with factory experience, and .142 with rural/urban origin. It is puzzling that Stephenson's use of such criteria of validity should be sauce for his goose which apparently will be denied to our gander.

If Stephenson really meant to show that measurement based on criteria external to the community is "meaningless," he should have constructed, or borrowed from elsewhere, a scale of the type he believes to be meaningless and then tested its relation to the same structural variables—such as age, education, residence, and occupation—used to validate his scale. Since he did not do so, he has no basis of fact for making his assertions. We do have the facts, and the evidence shows Stephenson to have produced a scientific red herring.

In the Indian phase of the Harvard Project on Social and Cultural Aspects of Economic Development we explicitly addressed ourselves to the theoretical and empirical issue which Stephenson raised and then promptly settled without reference to any evidence.[5] The following quotation from our report should make it immediately obvious that we were concerned with precisely the issue raised by Stephenson: "Can there be," we asked, "an entirely local, native, culture-based measure of modernity," and if it exists, what relation does it have to the transcultural measure of modernity which the project applied indiscriminately in six developing countries? To see if there was a distinctive local concept of modernity, Singh, my Indian collaborator, constituted a group of students as a local informant

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[4] The scale we derived by the criterion method correlates around .80 with the scales derived with theoretical constraints playing the decisive role. This is highly relevant to the issues discussed above, since it indicates that sociological theory can identify dimensions of individual modernity which are validated by measures derived from empirical association with objective indicators.

[5] This phase of the work was under the supervision of Dr. Amar K. Singh, chairman of the Department of Psychology, Ranchi University, Bihar, India. A preliminary report is given in Singh and Inkeles (1968).

panel in Ranchi, much as Stephenson conducted his interviews in Shiloh. The students did indeed suggest a set of special qualities they felt distinguished between the modern and traditional man in Bihar. The traditional man, according to these local informants, would, for example, prefer well water to tap water, a twig (*datwan*) to a toothbrush for cleaning his teeth, and a wife who automatically gave the best portions of food to her husband. Translating these ideas into questions yielded a strictly local Indian set of ten items to measure modernity, none of which did we include in our transcultural measure.[6] These special questions were then combined in a distinctive Indian, or indigenous, scale of modernity.

The correlation of this indigenous scale and the transnational scale applied to the same population was .560.[7] This result is significant far beyond the .01 level. Indeed, it compares very favorably with the best results obtained when we related the summary modernity scale (OM) to other subscales of the transnational variety.[8] Thus, while the indigenous scale is far from being identical to the transnational, the two are clearly tapping the same underlying psycho-social attributes of the individual. If the indigenous Indian scale is taken as the criterion, therefore, we can firmly assert that the scale produced by the social science outsiders, who had not consulted the local population, is nevertheless decidedly "meaningful."

An alternative to assessing the meaningfulness of the social science outsiders' scale in competition with the indigenous version is to test the relation of both to some third, preferably objective, criterion of modernization. The most appropriate test is the association between the scales and social structure variables. When we submitted the two scales to such a parallel test with our Indian sample, the outcome was relatively unambiguous. The transnational scale was at least equally strongly related to independent variables of the sort Stephenson identified as logical tests of the relevance of a scale of modern attitudes. For example, the correlations with education are .658 for the transcultural and .451 for the indigenous scale; in the case of residence, the Pearsonian r is, respectively, .189 and .277; and for ethnic membership, that is, for tribal versus nontribal, the coefficients are, respectively, .369 and .129. On balance, the transcultural

[6] This was because our rule in constructing the transnational scale provided that we would use only questions asked in all countries. The transcultural measure did, of course, contain reasonable analogues of these distinctively Indian questions. This should enable us to recognize, again, that a sensitive theoretical orientation, however transcultural in conception, may be much less divorced from the concrete reality of diverse local cultures than, at first glance, it seems to be.

[7] This correlation applies to the Indian sample of cultivators, industrial workers, and urban nonindustrial workers, totaling 1,300 cases. The transcultural measure used for this correlation and those given below was the OM Long Form described in Smith and Inkeles (1966).

[8] Our scale of "political information," for example, was one with the highest reliabilities and the strongest relations to the independent variables. It correlated .604 with that form of the summary modernization measure (OM-2) which did not itself include any information questions.

measure derived from sociological theory predicts "modern" social characteristics more accurately than does the indigenous measure constructed on the basis of advice from local informants!

Clearly the transnational scale is not a "meaningless" measure, unless the indigenous scale, constructed by exactly the same procedure as was Stephenson's, is also "meaningless." In other words, to measure individual modernity, it is not necessary to restrict oneself to themes designated by community members as relevant dimensions. Relevant dimensions can also be derived, as ours were, from sociological theory.

In affirming the meaningfulness of scales derived from theory, however, we must be careful not to commit the very error into which Stephenson fell. The theoretically derived measure of modernity is not, in any *absolute* sense, better than one based on the views of local informants. It is meant to serve a different purpose. If your purpose is to identify the way in which local people see that process of change so often called modernization, then Stephenson's method of scale construction is clearly the one you should use, although you should stick more consistently to principle than he did. If, on the other hand, your purpose is to measure attitude change on dimensions which sociological theory identifies as important because of their relation to social structure, the method we used is probably more relevant. And if your purpose is merely to discriminate most accurately attitudinal differences among a set of men, still a third method might be, by that standard, the best. However, all three approaches would, within the terms of reference stated, be quite decidedly meaningful.

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REFERENCES

Inkeles, Alex. 1966. "The Modernization of Man." In *Modernization*, edited by M. Weiner. New York: Basic Books.
Singh, A. K., and Alex Inkeles. 1968. "A Cross-cultural Measure of Modernity and Some Popular Indian Images." *Journal of General and Applied Psychology*. Vol. 1. Ranchi/Patna, India: Bihar Psychological Assoc.
Smith, David, and Alex Inkeles. 1966. "The OM Scale: A Comparative Socio-Psychological Measure of Individual Modernity." *Sociometry* 39:353-77.
Stephenson, John. 1968. "Is Everyone Going Modern? A Critique and a Suggestion for Measuring Modernism." *American Journal of Sociology* 74:265-75.

THE AUTHOR REPLIES

I find Professor Inkeles's comments helpful in several respects. First, his remarks very effectively make the point that there is room in the world for more than one procedure for scaling the same attribute, a point which I seem to have obscured in trying to make. A valid and reliable transcultural measure of individual modernism certainly has its uses, as does a scale of modernism derived from a specific culture, and I would agree that the type of scale one chooses depends on the purposes one has in mind.

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Second, a major source of misunderstanding about my critique lies in the interpretation of the term "meaningless," and Inkeles's commentary offers an opportunity to clarify the intent of that term. The sentence in which that term was used most strongly was the one that Inkeles quotes in his "Comments": "If no differentiation is made in the [local] culture between traditionalism and modernism, then movement along the dimension cannot be recognized by the participants, and the study of modernization in this cultural setting is meaningless." I should have added, "to those participants," but I felt that this redundancy was unnecessary since it was implied by the context. In short, I would agree that it may be possible to derive measures of modernism and modernization which are meaningless and unrecognized by a local populace but meaningful to someone outside the culture. Of course, there are dangers inherent in devising such measures, and I hope Inkeles would agree that among them are the possibilities of ethnocentric and even professional biases.

The likelihood of introducing this kind of influence is enhanced, it seems to me, when one takes too seriously the analogy drawn between the measurement of personal and cultural traits and the diagnosis of organic disease. The more proper analogy may be between modernism and mental health. Pneumonia, I expect, is pretty much the same wherever one finds it, and cases of equal severity probably incapacitate the afflicted individuals physically to about the same extent, no matter where they are located. Diagnosis by the physician is at least equally useful and probably superior to "folk medical" diagnosis in determining extent of impairment. Indeed, it would matter little (though it might matter some) whether the doctor and patient were from the same culture or whether one of them was from Park Avenue and the other from the Peruvian highlands.

The case is different with mental health and illness. Assuming that a transcultural nosology were available (and there may be some significance in the fact that there is not), would it not be true that the same professionally diagnosed illness may take somewhat different forms in different localities, and, furthermore, that the same professionally diagnosed illness may be incapacitating to different degrees in different localities? How "maladjusted" a given mental illness renders a person—and therefore how "healthy"—depends on the requirements of the system in which he is stationed and on the perceptions of the "illness" by other members of that system. Judgments of the extent of impairment might vary greatly depending on the social system and culture of the "patient" and the doctor, respectively.

Still, I will grant that it may be possible to devise a universally applicable scale of mental health. I would only suggest that such a scale runs the danger of taking on the properties of the persons who make it up. If it does, and if it is useful to know how much like oneself other people are, then it is a useful scale. It may not tell how "healthy" those people are, except to an egotistical operationist. To the extent that the scale is grounded in something besides personal conjecture, it takes on meaning in terms of these other grounds, and these grounds, be they theoretical, empirical, or

whatever, must be known before one can know the meaning of the measure.

To return to the subject of modernism, when I wrote the original article, I was precisely at this point. For, granting that meaningful measures of modernism can be constructed which do not take into account criteria of modernism recognized by local participants—measures which measure the same thing universally—there is still the question whether the OM scale is such a measure. I never meant to say it was meaningless, but I did mean to raise the question of what it meant. Is everyone going modern? I was simply uncertain from the information presented in the article by Smith and Inkeles[1] whether we could answer that question. It is one thing to find a sorting device which separates populations into different piles; it is another to determine the basis on which the device does the sorting.[2]

A third contribution made by Inkeles's comments is his useful distinction between "salience" and "relevance." As I interpret it, this distinction implies that a given criterion of modernity may be meaningful to a group without being recognized by that group. Using that distinction, the criteria in the Shiloh scale are salient, but they do not represent all possible criteria which are relevant. (Does any scale?) Inkeles speculates that there are a number of (at least two) other criteria which would have been relevant in Shiloh (the test for relevance apparently being item-to-scale correlation coefficients). His reasons for this speculation are (1) the finding that "they are in fact strongly associated with items of the type which found their way into Stephenson's own scale of modernism in Shiloh," and (2) the fact that the same kinds of correlations were found in Hazard, Kentucky.

I am not prepared to make this leap of faith with Inkeles. First, we do not know the extent to which particular items in the Shiloh scale operate like their supposed counterparts in the OM scale. (For example, the OM item on "old ways" is set in the context of an intergenerational discussion of corn raising, whereas the Shiloh item on "old ways" simply says, "I think the old ways are mostly best for me.") Second, even assuming the

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[1] And from that offered in the Inkeles chapter in Weiner, which I have reread carefully since receiving Inkeles's comments. "The Modernization of Man" is, the way I read it, basically a proposed definition of individual modernity. It is more elaborate than the definition presented in the Smith and Inkeles article but essentially no different from it. The elements of this definition are based on what the author feels are requirements for successful functioning of an individual in "modern" social structures. My personal feeling is still that the linkage between *theory* and scale dimensions is weak and not explicitly stated, but perhaps I am being unduly harsh. The linkages between *empirical findings* and scale dimensions I also feel are weak. Although Inkeles claims that he has established the elements of modernity on the basis of the findings of others, on only a few instances does he tell who found what, let alone how. Despite such generalizations as "Many analysts of the problem propose . . ." and "Almost all serious scientific investigations of the question have shown . . . ," only one reference is offered in the entire essay. Although I respect Inkeles's opinion about what constitutes modern man, it still remains just that— an opinion.

[2] In this connection, Inkeles is incorrect when he says I would claim that indigenous scales would "work" where the scale of the social science outsider would not. The "non-salient" scale may well show variations on a number of social indicators, but the scientist may still not know what the scale means to the people.

items are identical, one would like to know exactly what the "strong associations" were, especially in view of some of the relatively low item-to-scale correlation coefficients found in table 1 of the Smith and Inkeles article. An item-to-scale correlation of .294 means that one of these variables explains only 8.6 percent of the variance in the other. Some of the correlations in table 1 are lower than .10, meaning that less than 1 percent of the variance is explained by those items. If these low correlations are acceptable,[3] then one wonders what constitutes a strong association.

Third, there is the matter of the findings for Hazard, Kentucky. I hesitated and am still reluctant to comment on the Hazard footnote to which Inkeles pointedly calls my attention because, again I would like to have more information than that brief reference makes available. (I have, incidentally, attempted without success to pry a copy of this paper loose from the undergraduate librarian at Harvard.) The case for the universality of the OM scale would certainly be strengthened if it were found that the same set of items yielded the same results in Hazard as in six other societies (i.e., the same item-to-scale correlations, the same relationships between scale scores and external criteria, and the same relationships to local expressions of modernity and traditionism insofar as they differ from the OM dimensions). Whether the OM scale would yield the same results in Shiloh as in Hazard is an open question—one which I would be interested in having answered—since there are considerable differences between the two communities in population size, economic history and present economic structure, centrality of location, and political dominance (Hazard, unlike Shiloh, is a county-seat town). Whether such differences would affect the operation of the scale is unknown. With regard to the two specific criteria of "interest in foreign news" and "joining organizations," my guess is that Hazard and Shiloh might show internal differentiation on the former, but only Hazard on the latter.

In short, I do not believe we have quite "every" reason to assume that the OM scale items would be good (relevant) indicators of modernity in Shiloh, even using Inkeles's methods of determining relevance.

Inkeles's comments are helpful in a fourth way because they bring up the question of the relationship between modernism scales and external indicators. Certainly I would permit the makers of the OM scale to sauce their gander. I confess to being very much impressed by Short Form 3, derived by the criterion group method, which correlates highly (around .80) with other "theoretically derived" forms, although I wonder if one should not expect fairly high correlations among scales which contain many of the same items.[4] But my distress is not greatly relieved by the "test of

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[3] Also note the relatively low coefficients between scale scores and external criteria, reported in Inkeles's comments and in the original article on page 360, referred to again below.

[4] A quick check reveals that the thirty-four items in Short Form 3 constitute approximately 29 percent of the items contained in the Long Form. Items contained in Short Form 3 which are also found in Short Form 1 comprise about 58 percent of the latter. Comparable figures for Short Form 2, Short Form 5, and Short Form 6 are 52 percent, 100 percent, and 71 percent, respectively.

adequacy" referred to by Inkeles (p. 360 of the Smith and Inkeles article), which yields correlations of .434 with education, .179 with factory experience, and .142 with rural/urban origin. Tests of significance may have shown that the odds against such correlations occurring by chance are great, as one would expect with a sample of about 4,770, but the sizes of the coefficients themselves indicate that the strength of the relationships between the social indices and the OM scale leaves something to be desired (and explained). The coefficient of .434, for example, means that education accounts for about 19 percent of the variance in scale scores. Factory experience accounts for a little over 3 percent, and rural/urban origin about 2 percent, according to my slide rule. Thus, knowledge of a person's education, factory experience, or origin would not permit accurate prediction of OM scale scores in a very large number of cases.

Incidentally, I would not like to think that the validity of the Shiloh scale stands or falls on the evidence presented in footnote 29 of my article. Indeed, the fact that this sparse information on relationships of the scale to external factors was not granted the dignity of space in the main text may show that I did not wish to use much of this sauce on my goose!

The fifth and most useful contribution made by Inkeles's comments is his presentation of information on relationships between an indigenously derived scale and the social scientist–derived OM scale. It seems to me that the case for the validity of the OM scale is strengthened enormously if it is shown to be highly correlated with indigenous scales such as that constructed for India. Indeed, if we were to view the external criterion method and the "indigenous scale" method as two independent ways of assessing scale validity, and if a scale passed muster on both counts, then the greatest skeptic should be silenced. I have pointed out my reasons for hesitation in claiming complete validity for the OM scale on the basis of external criteria. The moderately high correlations between the Indian "toothbrush" scale and the OM Long Form is more impressive. Of course, two things remain to be shown. How well does the OM scale correlate with indigenous scales derived in other cultures than India? (I would be interested in knowing how well it correlates with the Shiloh scale as well.) Second, if such correlations are high, it would still have to be shown that the universes of content being measured were the same. It is not immediately apparent how preferring tap water and toothbrushes is related to, say, feelings about whether a man can be good without religion. These are questions which can be answered with more research and better theory construction.

To summarize, Inkeles's comments require me to acknowledge that the case for the indigenous scale of modernism, such as that derived in Shiloh, may have been overstated. I can see that it is ambiguous and subject to misinterpretation. But Inkeles's response also provides an opportunity to point out that the case for the transcultural social scientist–derived scale, such as the OM scale, is not completely airtight either. Both of us have some homework to do. I would agree with Inkeles's concluding senti-

ment that one's purpose should dictate the type of measurement used.[5]
To understand how these various measures are related to each other, both
empirically and in theory, is also important. Finally, I fear that the set of
attributes to which we refer as modernism or modernity are not related to
each other or to "structural" variables in nearly so simple a fashion as
either Inkeles or I imagine and that we would both do well to reread
Gusfield's (1967) essay on "misplaced polarities in the study of social
change"[6] before returning either to the sociometric laboratory or to the
field.

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REFERENCES

Feldman, Arnold, and Christopher Hurn. 1966. "The Experience of Modernization."
    Sociometry 19, no. 4 (December):378–95.
Gusfield, Joseph R. 1967. "Tradition and Modernity: Misplaced Polarities in the Study
    of Social Change." *American Journal of Sociology* 72, no. 4 (January):351–62.

[5] I would not agree with his statement that my use of judges is inconsistent with my
principle of using indigenous criteria of modernism. The judges were chosen not only be-
cause they were social scientists (not all of them were, anyway), or only because they
were familiar with any abstract theory or definition of modernism, but because they were
considered "experts" on the culture of the southern Appalachian region. Therefore the
scale items were not exactly screened by "outsiders."

[6] One of the few studies attempting to relate attitudinal to "structural" variables of
modernization is Arnold Feldman and Christopher Hurn (1966).

In Memoriam

Leopold von Weise und Kaiserswaldau

1876–1969

Since 1955 Professor von Weise was an advisory editor for the
Journal. Although the *Journal* does not normally publish obitu-
aries, in view of our long association with Leopold von Weise,
who died early this year at the age of ninety-three, we want to
add our personal sentiment of professional loss to the felicitous
obituary written by Everett C. Hughes in the *American Sociolo-
gist* (May 1969). Probably it is those of us in Professor Hughes's
generation who most appreciate his perceptive and sympathetic
comments. We are grateful for Professor von Weise's helpful
responses to the requests by the editors. But his contributions
were by no means limited to his assistance to the *Journal* editors.
Many of us learned whole realms of sociological lore and scholar-
ship from von Weise's work, especially with the help of the late
Howard Becker of the University of Wisconsin.

Book Reviews

Children of the Dream. By Bruno Bettelheim. New York: Macmillan Co.,
1968. Pp. xiii+363. $6.95.

Robert Coles

Throughout his career as a psychoanalyst Bruno Bettelheim has been in-
terested in man's adaptive (and not-so-adaptive) responses to severe social
stress, the kind of stress that survivors of concentration camps faced, the
kind that autistic children go through, and most recently the kind that
many Israelis must face—as both political and psychological pioneers who
are up against sworn enemies on all sides. Bettelheim's latest book, *The
Children of the Dream*, like *The Empty Fortress* and *Love Is Not Enough*,
demonstrates how successfully he has managed to record hundreds of obser-
vations and, at the same time, make psychoanalytic inquiry a living,
flexible, imaginative, and sensitive exercise.

This book suffers in a brief summary because, as always, Bettelheim is a
shrewd social and psychological observer. It is such a pleasure to meet an
analyst who knows what takes place in the unconscious but at the same
time has a real sense of how societies affect individuals—yes, "deep down,"
profoundly and without their awareness. The thrust of Bettelheim's argu-
ment is that the traditional psychoanalytic view of childhood—alas, the
traditional psychoanalytic view of childhood is all too often the entire
psychoanalytic view of man—applies very well to certain kinds of Western,
white, middle-class people but has to be thoroughly revised, modified, and
qualified if, say, psychoanalytic justice is to be done to the people of Israel's
kibbutzim. There, children very quickly (in a matter of weeks) become
members of a community, not a small, tightly knit family. There, a boy or
girl does not have *a* mother, *a* father, one or two brothers or sisters. There,
children learn laws and rules from all sorts of people, learn most of all what
sharing *really* means, learn, it can be said, that sharing can be a way of life,
begun right at the start and kept up throughout life.

We liberal, psychoanalyzed parents tell our children to give, to share,
to be generous; and these days those children are telling us that they want
to do more than apportion their largesse, financial and emotional, to worthy
causes and people. They want a community, a community of the committed,
a community that, while surrounded by America's materialism and in-
dustrialism and imperialism (as they see it), can yet survive and grow. I
wonder how many of those youth realize what Israel's kibbutzim have
done—to bring an idea or an ideal like "communal living" to life, to the
life that a child, indeed an infant, knows and never quite forgets. I wonder,
too, whether many of us, citizens of America in the twentieth century,
could quite do it, do what those Israeli parents do: in many senses, from
our viewpoint, surrender the child to his or her society.

Bettelheim analyzes what the surrender means, its advantages and its
disadvantages, its value and its dangers, its gains and its losses. There is no
utopia on this planet, not a political one or a psychoanalytic one or one that
comes about through this or that manner of child rearing. The "children of
the dream" do not know "our" fierce loyalties, our possessiveness, our in-
tense rivalries and jealousies, or even our oedipal complex, as a result of
which, no doubt, some psychoanalysts will find them "psychologically
deprived" and "psychologically disadvantaged" children. (*Everyone* has an

oedipal complex, I was told during my psychiatric training. The societies and cultures may change the complex's "forms," but its existence "cannot be questioned." I can still hear those last three words and see the face, grave and confident, sure that some truths are unassailable and that some students are lucky enough to have nothing to question or doubt.)

In any event, the Oedipus complex and all that is implied in its development and resolution have a lot to do with the way we are. We live with our parents; they are in our minds. In fact, the particular intimacy that develops between a mother and a child sets the stage for the very way we think, for the voices we always hear, with all the tenderness and disapproval (it is always both) those voices convey. Bettelheim, in a way, gives us yet additional information about the *limits* of personality development. Not only individual fathers and mothers determine who we become, how we think and feel and get along with one another. There is just so much a given society or culture allows. The child of our middle-class suburban society is very distinctly different, at one or two, from the child of an Israeli kibbutzim. The two children have begun to learn different psychological maneuvers—in keeping, of course, with the different ways they are treated, all sanctioned and encouraged, naturally, by particular social systems. While all of that may sound rather obvious and is certainly well known, it is rather a relief to find such knowledge *assumed* by a psychoanalyst and even systematically used in a conceptual way.

What is more, we realize how much we have lost in these years: a generation of analysts have *not* made the kind of social *and* psychoanalytic observations, out "there" in the world, that urgently need to be made—for the sake of psychoanalysis as much as for fields like social anthropology.

Defining the Situation: The Organization of Meaning in Social Interaction. By PETER McHUGH. Indianapolis: Bobbs-Merrill Co., 1968. Pp. 143. $2.95.

Gerald Platt

Harvard University

McHugh has written a beguilingly simple and exceedingly important book. Because of its simple and intelligible language, many may underrate the importance of its contribution. Perhaps the most frequent and mistaken criticism will take the form, "That's all commonsensical," or "What's so new about that?" However, neither of these comments is close to an appropriate reading of the work.

Working out a theoretical orientation that is between phenomenology and symbolic interaction but much closer to the former, McHugh asks what formal features or rules actors (aware or unaware) employ in order to come to definitions of their social surroundings. The author is not engaged in discovering the content of that definition because the content can vary, but rather he is involved in discovering how definitions of any kind are achieved and what rules are employed in achieving definition. Indeed, McHugh makes a rather significant epistemological point when he claims that social order and definition of the situation are equal.

McHugh emphasizes two dimensions of the social milieu which actors

rely on to achieve a definition of the situation—a temporal component (emergence) and a social spatial component (relativity). The former relies heavily upon the actors' treatment of past and future expectations to organize the present situation. The latter, relativity, relies upon the actors' treatment of social interpretation of physical, social, and structural features of the contemporary scene.

The beguiling character of the book lies first in the cogent way in which McHugh abstracts two general features of social environments and courses of action—time and space—and then develops a simple set of categorical rules which make up the *detailed* features of each of these dimensions. The author claims that emergence may be cataloged by, for example, the rule of imputing a *theme* to any symbolic communication, that the theme is *elaborated* over the discourse, that new and even contradictory, divergent, etc., elements in the discourse are made to *fit* the theme. In all, emergence is characterized by five subrules of treating discourses, courses of action, objects, etc., and relativity by six rules. The significance of this is that McHugh has developed a theoretical framework for describing the phenomenology of actors in their courses of action whereby actors succeed in defining their surroundings and, in turn, generate a sense of order concerning their varying, mutable, and multistimuli environments.

Treating an interaction so that one discovers or describes what rules actors use to define *their* situation is not commonsensical, nor have we known it before, because it was not in the literature. And McHugh is correct when he relates that, to date, the "definition of the situation" has been used only in the most varied and amorphous way. It is a concept too often taken for granted and not unlike certain inert gases, uninvestigated precisely because they were conceived as inert.

If McHugh has done nothing else, he has taken this old sociological saw and carried it much further and, indeed, in a more *detailed* theoretical fashion than has ever before been conceptualized. But McHugh has done more than this. He has, in addition, attempted to conceptualize time as a theoretical constituent feature of social courses of action. And while everybody in sociology talks about time and its significance, too few American sociologists have done much about it.

But McHugh's work is not without fault. Perhaps its weakest aspect is the lack of empirical substantiation of his theoretical discourse, and this is said not because the work tends toward "soft" sociology. For example, when McHugh explains why his data went awry under the conditions of anomie, one gets the distinct impression that he himself is engaged in "defining the situation." That is, he discovers a theme in his data, elaborates it, finds its fit, and so on.

There are other methodological-theoretical problems. For example, does the condition of anomie reside in the technical manipulation (the structure of the responses to subjects' questions) or in the actors' incapacity to define the situation (for whatever length of time)? McHugh suggests it is the latter, and naturally this is theoretically the more important. But methodologically the condition of anomie tends to be generated by relying heavily on the former. Further, given McHugh's theoretical orientation, I am sure that he is well aware that to manipulate any event at all, as he has done experimentally, is to alter it. Yet he makes no theoretical provision (except ad hoc references to the experiment) to account for the effects of the manipulation on defining the situation.

Finally, a general point of criticism relates to the theoretical framework from which McHugh derives his work. McHugh does not claim that the features he offers are an exhaustive set of rules for defining the situation, and yet he uses no others in analyzing the protocols of his respondents. Are we to assume a systematic analysis or a programmatic scheme by which to address the problem of how actors go about defining their situation? I think we must assume the latter. And if the latter is correct, how is compliance even to a limited set of rules achieved? That is, what are the features that stabilize *these* rules? Without attention to these points, I fear the whole endeavor must forever remain programmatic.

I have said that McHugh's work is not without fault—but this is equal to saying it is within the realm of social scientific contribution. The critical issues in evaluating a work in our field are its creativity, its originality, the degree to which it advances a body of knowledge, its cogency, its clarity. By all of these standards, McHugh, in this short work, has attempted and accomplished much more than most social scientists.

Varieties of Police Behavior: The Management of Law and Order in Eight American Communities. By JAMES Q. WILSON. Cambridge, Mass.: Harvard University Press, 1968. Pp. xiv+309. $6.50.

Thomas Smith

University of Michigan

Most everyone has the experience in traveling of passing through a variety of communities, being ticketed in one, warned in another, and given directions in a third. But few of us reflect enough upon such varieties of experience to suspect that, among the three, there may be the systematic differences of police culture or style that James Q. Wilson has isolated and analyzed. This brilliant book is a comparative study of law enforcement and order maintenance in eight such contrasting American communities—six in New York (Albany, Amsterdam, Brighton, Nassau, Newburgh, and Syracuse); Highland Park, Illinois; and Oakland, California. None of these is the "typical" American community; if it were, the exploratory purposes of Wilson's research—differentiating varieties of police behavior and their correlates—would hardly have been served. Grounding this comparative focus, ordering the differences into a coherent rhetoric, is one of the richest appreciations of the generic aspects of the roles of patrolmen and police administrators to have appeared in the literature. The book is a blend of the particular and the general, of practical and theoretical wisdom, adding significantly to the important contributions of Wesley, Banton, Skolnick, and others by its systematic concern with placing the understanding of police systems into a fuller comparative perspective.

In 300 pages Wilson carries us from an analysis of the roles of administrators and patrolmen—in which he isolates the critical issue of police discretion, its use and management—to a fourfold typology of discretionary situations built out of two distinctions, order maintenance versus law enforcement and police-invoked versus citizen-invoked action. The author then moves to a highly suggestive differentiation of three typical police "styles"—watchman, legalistic, and service—to an accounting of these

styles in terms of surrounding political cultures, and, finally, to a set of concluding policy implications.

The inherent difficulties of patrol work are analyzed in relation to the function of maintaining order, with the law serving as one of several resources in a context constrained by competing standards of justice and cultural differences among population groups. The contrary emphasis on law enforcement among police administrators and their indifference to "planning" is traced to the paucity of reliable means of evaluating the effectiveness of police work and to the inability to rationalize police discretion in most order-maintenance situations through clear-cut rules. Focusing then on the "determinants of discretion," Wilson introduces the typology of discretionary situations, discussing each of the constructed types by reference to the forms of crime or disorder it denotes, the associated police actions, and the extent to which each type is subject to administrative control and is influenced by variations in the characteristics of the eight communities. Detailed attention to differences among police activities in these communities then leads him to the second, related typological endeavor in the book, identifying varieties of police style. The "watchman" style differs from the "legalistic" style in that the former emphasizes maintaining order and the latter enforcing the law. The third pattern, the "service" style, is a hybrid enabling police to balance both of these functions and is found mainly in culturally homogeneous suburban communities where police action is directed to maintaining a concept of public order shared with the community. The typology is useful both for differentiating departments in terms of outlook, strategy, organization, and other matters, and for suggesting the connection between police action and varieties of political culture. The watchman style is found primarily in cities with "caretaker" governments, in which politicians appeal mainly to working-class constituencies on the basis of personal ties and party loyalty and maintain a low level of public services. Legalistic departments are found in cities with strong, professional city managers. And service departments are found where politics are oriented to the provision of amenities to communities which expect them, where government is itself service oriented.

Despite the overall value of these contributions, the book has its faults. The major one is Wilson's avoidance of any sustained concern with what is obviously one of the central variables explaining differences in police behavior, namely, *legitimacy*. That he has managed to get as far as he has without reporting a connection between phenomena like police defensiveness, bureaucratic alienation, even the types of styles as he has formulated them, and variations in police legitimacy is only a testament to the sustained power of his other concepts. This avoidance of treating police action in the tradition of analyzing authority and its legitimation, an avoidance not confined to Wilson's book, closes off a realm of powerful tools of sociological analysis. Arguing from experience that police work is inherently subprofessional or craftlike is a ramification of this conceptual curtailment. It fails to appreciate the extent to which a supportive, mandating environment, one not so extremely hostile or apprehensive as Wilson speaks of in discussing subprofessional police work, is a condition of the nourishment of professional norms. That there are varieties of police behavior and style bespeaks, in part, the variance within and among these normative environments.

Nevertheless, Wilson's monograph is the best treatment of these varieties yet to appear. The overall value of his contributions, the clarity of their development, the experiential reportage illuminating the variety of paradigms animating police activity, are enough to recommend this book for the serious study of all sociologists interested in occupations, government, and authority systems.

Sociology and Everyday Life. Edited by MARCELLO TRUZZI. Englewood Cliffs: Prentice-Hall, Inc., 1968. Pp. 371. $3.95. Paper.

Carol Brown

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One of the petty annoyances I find in my reading concerns the naming of books. A title claiming more for the book than it can deliver strikes me as intellectually dishonest; a title that is too honest is usually a bore. A good title should both describe the contents and appeal to the imagination without exaggerating the reader's expectations. One of my favorites for these reasons is W. J. Goode's essay on "The Theoretical Importance of Love" (*American Sociological Rewiew*, vol. 59); one of the worst I have ever seen is *Sociology and Everyday Life.*

I would not harp on the matter if this enjoyable book did not deserve to be better named. It is actually a collection of essays about everything *but* everyday life, from *Mad* magazine, Beatlemania, flying saucers, and circuses to more common matters like the Mafia and sex. But unless the publishers really believe that the "everyday" minority groups in this country are dwarfs and nudists, I would suggest they return to their alternative title, *The Hip Reader in Sociology.*

The twenty-nine essays on twenty-nine subjects range from excellent to lousy. Although the treatment is sometimes more trivial than the subject, quite a few of the topics are significant enough to deserve more attention, and some of the more obscure topics are quite well treated. I hestitate to pick the ones I liked best; "each to his own taste" in a zany collection like this. But here goes.

I read Dean Ellis's excellent article on the identification of a speaker's social class by his speech patterns when it was first published, and I remain impressed. Anyone who thinks Henry Higgins belongs in England is advised to study these findings and keep his mouth shut. Two more theoretical articles are Vilhelm Aubert and Harrison White's chapter on sleep—have you considered the social implications of being unconscious eight hours a day?—and Robert Blauner's article on death, which speculates that the importance of death in religion and ritual depends on the characteristic age and social situation of those dying in a given society. The only article that was intended to be laughed at (there are a few that unfortunately ended up that way) is Warren Hagstrom's tongue-in-cheek analysis of Santa Claus, which is worth the price of the book.

Three others I liked for a variety of reasons were James Henlin's examination of why taxi drivers trust their passengers, Sidney Aronson's discussion of the overlooked historical importance of bicycles, and Donald Ball's analysis of telephones and telephoners. Other readers are invited to make their own choices as it suits their fancies.

On the whole, the essays are enjoyable and worth reading. The book is a must for everyone who is tired of serious sociology, and I would recommend samplings of it for lightening up undergraduate courses. Just steer students away from the real clinkers, or they will be convinced we are all out of our minds. They may have good reason to believe that anyway; in fact, the more I think about some of the nonsense that passes for serious sociology, the better this book looks to me. At least these authors know when they are talking nonsense.

Interpersonal Styles and Group Development: An Analysis of the Member-Leader Relationship. By RICHARD D. MANN in collaboration with GRAHAM S. GIBBARD and JOHN J. HARTMAN. New York: John Wiley & Sons, 1967. Pp. vii+308. $8.25.

Philip Brickman

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What a person chooses to study of human interaction expresses a view of human nature. For Richard Mann, Graham Gibbard, and John Hartman, the emotions and fantasies aroused by other people are the important features of interaction. In this comparative analysis of four "sensitivity training" groups or "T-groups" (each meeting for thirty-two sessions as a course in Harvard Summer School), the authors interpret the direct and symbolic indications of group members' feelings—hostility and affection, anxiety and depression, guilt and identification, dependency and self-esteem—in their developing relationships with the leader.

Work, as defined by T-group leaders, is honest communication and sharing of feelings by autonomous members. The conditions under which a group can work is a major theme of this study. Before a major work phase occurs in any of the four groups, there occurs a period of dependent complaining, a period of abortive or "premature" work effort, and a phase of dramatic rebellion or confrontation. The authors suggest that the leader's ability to surmount the confrontation, and the fantasies attendant upon it, without either being destroyed or destroying group members provides the basis for members' identification with him and their subsequent work.

The work stage and other stages emerge in this book less as phases that all members pass through than as a process by which some members replace others as salient figures in the group. Each group, for instance, contains people who resist both the leader's influence and his values (in either a "paranoid" or a "moralistic" style); these people dominate the group's early efforts to reject the lack of structure.

If all groups pass through such stages, and if such stages are in general mediated by expressive roles, teachers and other practitioners might well want to modify their approaches. The extent to which groups do function in this fashion is an issue social psychologists might wish to pursue in their own fashion. One might look, for instance, at how such processes are affected by various dependent variables such as group cohesiveness or group productivity. Unfortunately, people working in the process-oriented, observational tradition of group dynamics have had little use for such variables, while people working in the experimental tradition of group dynamics have had little interest in the rich, confounded interaction process.

A major asset of this work is its sustained effort to convey the nature of T-group experience. The book begins with a transcript of a session and ends with a case history; in between, discussions of scoring categories, stages, and roles are always accompanied by excerpts from the transcripts. This makes the book accessible to the nontechnical reader and should enhance its value for the social psychologist unfamiliar with T-groups.

The overriding problem with this work is the extent to which findings are embedded in the coding scheme. This scheme makes "expressing depression" and "denying depression" major categories; not surprisingly, these events help define the group stages. If one begins (like Robert Bales), with "giving orientation" and "asking for orientation" as major categories, these will define group events. The problem of "multiple interpretations" is not a trivial one; one possible approach to it might be to compare the results of different coding schemes applied to the same interaction sequences.

None of this should detract from the merits of this book as the best available work on T-groups, both as a description of the experience and as a theoretical approach to the analysis of group-process data.

Angels in Marble: Working Class Conservatives in Urban England. By Robert McKenzie and Allan Silver. Chicago: University of Chicago Press; London: Heinemann Educational Books, 1968. Pp. 295. $11.00.

Anthony Richmond

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"In the inarticulate mass of the English populace, Disraeli discerned the conservative working man as the sculptor perceives the angel prisoned in a block of marble." So wrote the *Times* in 1883. Disraeli's optimism was not shared by many of his fellow Tories. When Parliament granted the franchise to the majority of British working-class males in 1867, some were inclined to see revolutionary consequences. However, the fact that the Conservative party succeeded in maintaining itself in office for most of the century that followed suggests that Disraeli was right. The party did so by persuading a substantial proportion of working-class voters that it was in their own interests to support a party whose leadership was drawn almost exclusively from the upper and upper-middle classes. The authors explore the various ways in which the Conservatives made their pitch to the working class. The party in the nineteenth century was not above blatant appeals to imperialism and racism, which are curiously echoed in the anti-immigration sentiments of Mr. Enoch Powell today.

However, the central theme of the study is the role of deference in working-class political attitudes in Britain. The historical analysis is followed by an examination of opinion poll data collected between 1958 and 1963. The social and educational system in England encourages the preservation of an elite which, whether their status is ascribed by heredity or achieved through merit, commands the respect of a large proportion of working-class voters. It is notable that a deferential attitude is found among Labour party supporters as well, although not as frequently as among the Conservative voters who are manual workers.

There is another group of working-class voters who support the Conser-

vative party on more pragmatic grounds. McKenzie and Silver call the nondeferential working-class conservatives "seculars." This is not a particularly appropriate term for what, in practice, is a residual category.

This book invites direct comparison with E. A. Nordlinger's *The Working-Class Tories* (London: Macgibbon and Kee, 1967), and with W. G. Runciman's *Relative Deprivation and Social Justice* (London: Routledge & Kegan Paul, 1966). All three studies address themselves to the apparent contradiction between an interest theory of political behavior and the fact that the Conservative party in Britain obtains half its support from the manual working class, a third of whom habitually vote Tory. McKenzie and Silver's research actually predates the other two studies, although its publication came later. Taken together, the three studies go a long way toward explaining the paradox. Nordlinger uses an explicitly sociological frame of reference and puts forward a theory of stable democracy which suggests that a mixture of acquiescent and directive attitudes toward political authority, in individuals or in the major conflict groups within a society, is a condition for stable democracy. Runciman introduces a psychological dimension and bases his explanation on reference-group theory and feelings of relative deprivation.

In contrast, McKenzie and Silver lean more heavily upon historical interpretation. They argue that British political and social culture has acted directly upon both the conservative elite and large parts of the working class, disposing the former to propose and the latter to accept doctrines and policies which have continued to encourage working-class conservatism. McKenzie and Silver argue that English working-class conservatism is not inconsistent with an interest-group explanation of voting behavior, since those supporting the Tory party expect economic benefits to follow. The authors argue that English deferentials feel themselves morally equal to the elite because they accept the doctrine that those who fulfill "their stations in life" nevertheless contribute to the common good. They compare this view with ideologies of subordination which impose a sense of moral inferiority on those in lower social positions. They suggest that, in direct contrast with the experience of Negroes in America, working-class deferentials in England are provided with an adequate sense of self-esteem. In this connection the authors again quote Disraeli, who stated: "the people had got what they wanted, and they got more than they wanted. They were content, and were grateful" (p. 249).

It may be one of the peculiar qualities of political democracy in England that by not emphasizing equality or even equality of opportunity for everyone, it has not raised unrealistic expectations. In this way a system has been legitimated that preserves the power of a hereditary elite.

Winchester and the Public School Elite: A Statistical Analysis. By T. J. H. BISHOP in collaboration with RUPERT WILKINSON. London: Faber & Faber, Ltd., 1967. Pp. 263. 63s.

David Street

University of Chicago

It is, of course, remarkable how the English public schools have persisted in playing such an important and constant role in the confirmation and

generation of Britain's elites and upper classes despite the social changes and ferment in that nation generally and in its educational system in particular. *Winchester and the Public School Elite* documents some aspects of the nature and strength of this persistence, analyzing over time the social correlates of recruitment to and performance during and after matriculation at Winchester, one of the top group of elite public schools.

The authors describe some interesting sociological patterns. For example, they argue for the notion that the public schools' introduction of an officially open competition for admission actually increased the social exclusiveness of these institutions, for it led to a great growth in the numbers of expensive preparatory schools which could teach the necessary Latin for passing the open examinations. Largely, however, the authors present us with great amounts of relatively unanalyzed quantitative data. Although the work is seemingly addressed to present-day problems, directly or indirectly bemoaning the biases of the system throughout, it lacks contemporaneity. The authors say that their account "applies to Winchester until the 1950s. To what extent it applies to the Winchester of today is a matter of which we have no first-hand knowledge" (p. 18). The data largely consist of information on the social characteristics of students and their parents and the later occupational accomplishments of graduates attending Winchester into the 1930s.

This is not to condemn a work for being social history. Bishop and Wilkinson present us with more tables than history, however, and their analysis of the information is weak. First, most of the presentation consists of two-variable tables coupled with speculations in the text about what other factors might be at work—but without the effort taken to use the available data to find out whether indeed these interpretations are correct (and without the excuse that the numbers of cases were too small to do so). Second, the crucial analysis that concludes the book, looking at intergenerational changes in correlates of success in careers following graduation from Winchester, is severely flawed because the authors confuse strength of association with level of significance. And they do this even when the numbers of cases vary radically between generations. Thus, for example, the authors, making one of their major conclusions and a startling one if true, tell us (p. 202) that "over three generations there is an increased career significance of social origin." Yet this conclusion appears to be based only upon a difference in significance level between the first compared with the second and third generations, and the first generation seems to contain 982 cases, as against 2,232 and 2,055 in the second and third generations, respectively. Because Bishop and Wilkinson do not provide the actual data so that one could tell whether their statistics simply reflect the direct association which obtains between N and χ^2, we are left adrift.

In total, while the book makes interesting comments in passing on Winchester and on British education, its primary thrust is the presentation of detailed data on matters like the exact scholastic achievements of "Wykehamists" (a word deriving from the name of Winchester's founder) who went on to Oxford and Cambridge. The volume should appeal to those for whom the details of the competition among elite schools hold the same fascination as do past seasonal records for the truly devoted fans of baseball or soccer.

Ideological Change in Israel. By ALAN ARIAN. Cleveland: Press of Case-
Western Reserve University, 1968. Pp. xii+220. $6.95.

Irving Zeitlin

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As the author himself acknowledges at the outset and intermittently
throughout the book, ideological change in Israel has been minimal and
slow. Indeed, the reader learns very early that the central problem of the
study is not the change of ideology but its relative nonchange. The author
attributes this to the allegedly "conservative nature of the Israeli political
system [which] guards against radical alteration, leaving the fundamentals
of Israeli politics relatively unchanged." Moreover, the carriers of ideology
in this study are not the Israelis in general but a number of elites: 100
members of the legislative and administrative elites and 133 university
students, "members of a future elite." This study, then, could more ac-
curately have been entitled: "The Relative Absence of Ideological Change
among Certain Israeli Elites." Nowhere, however, does the author address
himself systematically to this interesting phenomenon.

In the first chapter, on "Voting and Ideology," Alan Arian presents data
showing that the parliamentary elite has remained traditional in its
political-ideological outlook, while the electorate has presumably acquired
a new ideology at once "less socialistic and more pragmatic." The members
of the *Knesset* (parliament) appear to have lost touch with the masses; yet
the masses continue to elect them. No explanation of this phenomenon is
offered except to suggest impressionistically "that many Israeli voters
tend to vote to the left of their ideological positions." In this contest
much space is devoted to adaptations of the Guttman scale that add little
or nothing to the reader's understanding.

Following this are two chapters on the *Kibbutz* movement and its
ideology. There the author seeks to establish that the *Kibbutz* ideology may
be regarded as the substance of the traditional value system of the Israeli
society as a whole. Among the elite groups interviewed, the members of
the *Knesset* adhere most closely to these values, the administrators less
closely, and the students least.

In the next two chapters, on ideological change, we learn that the domi-
nant ideology appears therefore to be declining. The author recognizes
that the "notion of the 'decline of ideology,' while deceptively attractive, is
exceedingly unclear." He therefore alerts us to the qualifications that must
accompany the proposition: If the traditional ideology is declining, this
is true not in the sense that its content is being repudiated but rather in the
sense that its main elements are adhered to with less intensity.

Yet the younger generation, the future elite, seems indeed to reject the
socialist dimension of the *Kibbutz* ideology. Unfortunately, however, we
never learn what they are striving to replace that dimension with and why.
For, as Arian acknowledges, "the very nature of the analysis does not pro-
vide us with answers about their positive ideological positions."

Generally, this study leaves one feeling somewhat disappointed. Arian
recognizes that the main sources of social and ideological change, as well as
resistance to these processes, are to be found not among elites but else-
where. He writes: "Changes in a society and its ideology are likely to occur
long before they are reflected by the official actors of the society." Yet, the

author decided for some reason to confine his attention to elites—thereby missing, in my opinion, an opportunity to study his problem at a more fundamental level.

Finally, one might quarrel with some of the author's bald assertions in his "Conclusion." For example, the Israeli political system is a *"de facto* one-party system."* Or "National politics is party politics and party politics is elite politics." These statements are at best subject to crippling reservations and at worst simply false or misleading or both.

Man and Aggression. Edited by M. F. ASHLEY MONTAGU. New York: Oxford University Press, 1968. Pp. xiv+178. $1.95.

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Occasionally a writer exchanges the garb of a scholar for that of a master. He spurns the dictates of the scholarly role by flagrantly ignoring the scholarly method, so much so that some other members of the scholarly community may find it incumbent that the record be set straight. Ashley Montagu's *Man and Aggression*—a compilation of fifteen articles evaluating Konrad Lorenz's *On Aggression* and Robert Ardrey's *African Genesis* and *The Territorial Imperative*—is just such an attempt. Montagu initiated his task hoping "to correct what threatens to become an epidemic error concerning the causes of man's aggression, and to redirect attention to a consideration of the real causes of such behavior" (p. ix). His collaborators have more than vindicated him. They have centered their arguments around the following questions: (1) Does man—along with certain other animal species—have an innate instinct of aggression, or is aggression a learned trait? (2) Lorenz and Ardrey argue that we can learn about human behavior from evidence gathered by studying animals. Is this argument sound, and are their techniques of data collection both valid and reliable? (3) Are they qualified to make the assertions they are making, or are they quacks tracing the causes of malaise to a source that is false—thus leading to consequences that are dangerous?

Answering the first question, Barnett, Gorer, Scott, Schneirla, Boulding, Zuckerman, Stewart, Beatty, and Crook are in full agreement with Montagu that evidence does not support Ardrey and Lorenz's theory that man is instinctively belligerent and aggressive. These contributors, along with Ralph Holloway, also agree with the editor when he says that evidence rather shows that the role of learning and experience in influencing the development and expression of aggression is substantive (p. 14).

In reference to the second question, no one in this volume seems to have attacked the obvious reductionism on Lorenz and Ardrey's part more vigorously than Edmund Leach. "Can we take fish and birds as our models?" he asks, and then goes on to say: "to argue that the two behaviors are comparable in anything except a purely metaphorically sense is just nonsense" (p. 66). His premise is that animal behavior and human behavior are two different levels of reality and that it is the development of language and culture in human beings which makes them incomparable with other animals (p. 71). Evaluating the quality of data-gathering tech-

niques, Sally Carringhar, with her background as an ethologist, finds Lorenz's methods of data collection invalid and therefore unreliable. They are invalid because of the circumstances under which the latter studied animals: "with geese and fish, Lorenz is presenting evidence provided by captives, and captives held in conditions so unsatisfactory as to stimulate fighting" (p. 47).

In regard to the third question, investigating the nature and consequences of Ardrey and Lorenz's propositions, J. P. Scott points out that it is an erroneous notion "that fighting over the possession of land is a powerful, inevitable, and uncontrollable instinct." Moreover, it is a belief that may have dangerous consequences because "it might well lead to the conclusion that war is inevitable and therefore a nation must attack first and fight best in order to survive and prosper" (p. 57). Kenneth E. Boulding provides further support on this point when he suggests that both Ardrey and Lorenz have provided justification and legitimation to the United States war in Vietnam in the name of antiquity by reference to biological ancestors (p. 89).

This book does not propound any original thesis of its own; neither was this its avowed intention. It is a critical evaluation of somebody else's thesis and should be judged as such. Despite the negativistic slant of the arguments of the contributors, this anthology cannot be dismissed simply as an exercise in negativism. It is rather very positive in being negative, and in such a way that the moral and scientific gains are anything but negative. In my opinion, this is a timely work, and for all times. Hence, it should make appropriate reading for students of human behavior at any level.

Control in Organizations. By ARNOLD S. TANNENBAUM et al. New York: McGraw-Hill Book Co., 1968. Pp. xii+325. $9.95.

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Recipe for an instant book: Take nineteen articles (sixteen of which have previously been published); sandwich them between a brief introduction and summary (parts of which have also been published); add one of each of the following: cover, title, dust jacket, and price. Presto: there you are with an instant book to add to your growing bibliography.

The results of this technique are exemplified by this collection of articles on control in organizations, written (primarily but not exclusively) by Arnold Tannenbaum and his associates. However, the "instant" flavor of the book should not be considered a reflection on the quality of the ingredients. The articles themselves add a substantial increment to our empirical knowledge of organizational processes, and they should be read by everyone who undertakes empirical work in this subject area.

Tannenbaum defines the concept of control as "a cycle beginning with an intent on the part of one person, followed by an influence attempt addressed to another person, who then acts in some way that fulfills the intent of the first" (p. 5). He introduces the idea of a "control graph" on which the vertical axis represents the amount of control exercised on a given hierarchical level of an organization, and the horizontal axis represents the

various levels of the organization on which control can be exercised (for example, top management, second line supervisors, rank and file, etc.). To define this concept operationally, members of the organization (usually rank-and-file members) are asked to determine on a five-point scale how much the personnel on a specified level of the organization have to say about what goes on in the organization. An important property of control, as operationally defined in this manner, is that it becomes an expandable resource rather than a zero-sum commodity, since the amount of control exercised on one level of an organization is independent of that exercised on other levels. Organizations can and do vary in both total amount of control (as measured by the average height of the control curve, which equals the sum of the average amount of control on each level) and in the distribution of control (the shape or average slope of the curve). The more positive the slope, the greater the extent to which members at lower levels of the organization have some control or influence over organizational decisions. For example, in comparing the findings of several studies, including 112 local leagues of the League of Women Voters, 4 local unions, 32 stations of a delivery company, and 36 automobile dealerships, the authors find that in only 10 percent of the leagues is the ideal or desired slope negative, whereas the ideal slope is negative in 99 percent of the business-industrial organizations.

The book(?) is filled with far too many intriguing and suggestive findings to summarize them here (in fact, the author seems to have the same difficulty, for he fails to summarize them in any detail anywhere). Examples are: the recurrent finding across various types of organizations that total amount of control is positively related to effectiveness, and the finding that only in the leagues mentioned above is effectiveness related to degree of positive slope. This finding, combined with the differences in ideal slope mentioned above, suggests that democratic control is only a factor in effectiveness when its consistency with the values or expectations of organization members becomes problematic. For some reason the most tentative findings are also the most fascinating—for example, the finding that supervisory groups studied in Yugoslavia desire a more positive slope of control (that is, more control for workers) than that which they perceive to exist. The contrary is true of supervisors in the American organizations (although not true of workers in American organizations). Hopefully, more such cross-cultural comparisons will be made.

The fact that these measures are based on the aggregated perceptions of organization members is bound to bring up all of the problems inherent in purportedly objective measures based on perceptions. The authors are well aware of these and other potential limitations on the instrument they have developed; and their frank acknowledgment and analysis of problems of reliability, validity, and causation set an example which all researchers in this area could commendably follow. The fact that the instrument distinguishes in a meaningful way between types of organizations is somewhat reassuring. (However, there is always the nagging possibility that the measure really taps cultural stereotypes regarding the ways in which control should be and is exercised in different types of organizations. It might be useful to ask nonmembers of an organization to evaluate the actual control exercised by members on different levels. Large differences between the responses of members and nonmembers would strengthen the instrument's

claim to validity.) It is considerably more reassuring to find that an index derived from this measure correlates rather highly (between .48 and .66) with objective measures of centralization such as the distribution of compensation and decreasing average span of control, as chapter 20 by Thomas Whisler et al. demonstrates.

In spite of the valuable contribution which these articles make to the progress of research in organizational behavior—and that contribution is highly significant—one must still ask: is the value added by binding these articles together in one volume sufficient to compensate for the redundancy involved in double publication? The answer may be "yes" for two reasons. First, the reader who is confused about the meaning of "mechanical solidarity" can learn something by studying the way in which the chapters are related to one another. Second, the purchaser who finds he has bought only thirty-seven pages of previously unpublished material plus another thirty-four pages whose publication status is ambiguous (the introduction and conclusion) may learn, once and for all, that the whole is indeed no greater than the sum of its parts.

Books Received

JACOBS, PAUL. *Prelude to Riot: A View of Urban America from the Bottom.* New York: Vintage Books, 1968. Pp. x+298. $1.95.

JAHER, FREDERIC COPLE (ed.). *The Age of Industrialism in America.* New York: Free Press, 1968. Pp. x+400. $8.95.

JORDAN, NEHEMIAH. *Themes in Speculative Psychology.* New York: Barnes & Noble, 1969. Pp. 259. $6.75.

KAHN, HERMAN. *On Escalation.* Baltimore: Penguin Books, 1968. Pp. xxv+308. $1.65 (paper).

KAISER, EDWARD J. *A Producer Model for Residential Growth.* Chapel Hill: Center for Urban and Regional Studies, Institute for Research in Social Science, University of North Carolina, 1968. Pp. vi+77. $3.50 (paper).

KELLER, MARK, and McCORMICK, MAIRI. *A Dictionary of Words about Alcohol.* New Brunswick, N.J.: Publications Divisions, Rutgers Center of Alcohol Studies, 1968. Pp. xxviii+236. $7.50.

KEY, V. O., JR. *The Responsible Electorate.* New York: Vintage Books, 1968. Pp. xix+158. $1.65 (paper).

KING, BENJAMIN B. *Notes on the Mechanics of Growth and Debt.* World Bank Staff Occasional Papers, No. 6. Baltimore: Johns Hopkins Press, 1968. Pp. x+59. $1.50 (paper).

KIRK, SAMUEL A.; KARNES, MERLE B.; and KIRK, WINIFRED D. *You and Your Retarded Child: A Manual for Parents of Retarded Children.* 2d ed. Palo Alto, Calif.: Pacific Books, 1968. Pp. vii+164. $1.50 (paper).

KNORR, KLAUS, and ROSENAU, JAMES N. (eds.). *Contending Approaches to International Politics.* Princeton, N.J.: Princeton University Press, 1969. Pp. v+297. $7.50.

KOHLER, WOLFGANG. *Werte und Tatsachen.* Berlin: Springer-Verlag, 1968. Pp. 299. $14.50 (paper).

KOPF, DAVID. *British Orientalism and the Bengal Renaissance: The Dynamics of Indian Modernization, 1773–1835.* Berkeley: University of California Press, 1969. Pp. xii+324. $8.50.

LAMBERT, ROYSTON; HIPKIN, JOHN; and STAGG, SUSAN. *New Wine in Old Bottles?* Occasional Papers on Social Administration, No. 28. London: G. Bell & Sons, 1968. Pp. 171. 30s. (paper).

LANDES, RUTH. *The Mystic Lake Sioux.* Madison: University of Wisconsin Press, 1968. Pp. x+224. $7.00.

LAZARSFELD, PAUL; BERELSON, BERNARD; and GAUDET, HAZEL. *The People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign.* New York: Columbia University Press, 1968. Pp. xlv+178. $2.25 (paper).

LECHT, LEONARD A. *Manpower Needs for National Goals in the 1970's.* New York: Frederick A. Praeger, Inc., 1969. Pp. xxxi+183. $7.50.

LEFTON, MARK; SKIPPER, JAMES K., JR.; and McCAGHY, CHARLES H. (eds.). *Approaches to Deviance: Theories, Concepts, and Research Findings.* New York: Appleton-Century-Crofts, 1968. Pp. x+391. $4.75 (paper).

LESLAU, WOLF. *Ethiopians Speak: Studies in Cultural Background, Vol. 3: Soddo.* Berkeley: University of California Press, 1968. Pp. ix+236. $7.50 (paper).

LICHTHEIM, GEORGE. *The Origins of Socialism.* New York: Frederick A. Praeger, Inc., 1969. Pp. xii+302. $6.95 (cloth); $2.95 (paper).

LIFTON, ROBERT JAY. *Revolutionary Immortality: Mao Tse-tung and the Chinese Cultural Revolution.* New York: Vintage Books, 1968. Pp. xviii+178. $1.95 (paper).

LINDGREN, HENRY CLAY (ed.). *Contemporary Research in Social Psychology: A Book of Readings.* New York: John Wiley & Sons, 1969. Pp. xv+653. $9.95 (cloth); $5.95 (paper).

LITWIN, GEORGE H., and STRINGER, ROBERT A., JR. *Motivation and Organizational Climate.* Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1968. Pp. xiii+114. $6.00.

LLOYD, P. C. *Africa in Social Change.* New York: Frederick A. Praeger, Inc., 1969. Pp. 363. $7.50.

LLOYD-JONES, ESTHER, and ROSENAU, NORAH (eds.). *Social and Cultural Foundations of Guidance.* New York: Holt, Rinehart & Winston, 1968. Pp. xi+643. $6.95.

Lo BELLO, NINO. *The Vatican Empire.* New York: Simon & Schuster, 1968. Pp. 186. $4.95.

LOWENTHAL, LEO. *Literature, Popular Culture, and Society.* Palo Alto, Calif.: Pacific Books, 1968. Pp. xiv+168. $1.95 (paper).

LOWRY, RITCHIE P., and RANKIN, ROBERT P. *Sociology: The Science of Society.* New York: Charles Scribner's Sons, 1969. Pp. xxviii+622. $9.95. (Instructor's manual at no cost.)

McCAGHY, CHARLES H.; SKIPPER, JAMES K., JR.; and LEFTON, MARK (eds.). *In Their Own Behalf: Voices from the Margin.* New York: Appleton-Century-Crofts, 1968. Pp. ix+230. $2.95 (paper).

McGOVERN, GEORGE. *A Time of War, a Time of Peace.* New York: Vintage Books, 1968. Pp. xii+203. $1.65 (paper).

MacKAYE, BENTON. *From Geography to Geotechnics.* Edited by Paul T. Bryant. Urbana: University of Illinois Press, 1968. Pp. 194. $5.95.

McLEOD, A. L. (ed.). *The Pattern of New Zealand Culture.* Ithaca, N.Y.: Cornell University Press, 1968. Pp. xiii+301. $10.00.

MAIMONIDES, MOSES. *The Commentary to Mishnah Aboth.* New York: Bloch Publishing Co., 1968. Pp. xxi+166. $6.00.

MANGALAM, J. J. *Human Migration: A Guide to Migration Literature in English, 1955–1962*. Lexington: University of Kentucky Press, 1968. Pp. 194. $15.00.

MASOTTI, LOUIS H., and BOWEN, DON R. (eds.). *Riots and Rebellion: Civil Violence in the Urban Community*. Beverly Hills, Calif.: Sage Publications, 1968. Pp. 459. $8.50.

MATEJKO, ALEKSANDER. *Socjologia Pracy*. Warsaw: Panstwowe Wydawnictwo Ekonomiczne, 1968. Pp. 507.

MEAD, MARGARET; DOBZHANSKY, THEODOSIUS; TOBACH, ETHEL; and LIGHT, ROBERT E. (eds.). *Science and the Concept of Race*. New York: Columbia University Press, 1968. Pp. x+176. $6.50.

MENCHER, SAMUEL. *British Private Medical Practice and the National Health Service*. Pittsburgh: University of Pittsburgh Press, 1968. Pp. xv+125. $4.95.

MERLEAU-PONTY, MAURICE. *The Visible and the Invisible*. Evanston, Ill.: Northwestern University Press, 1968. Pp. lvi+282. $9.50.

METRAUX, ALFRED. *The History of the Incas*. New York: Pantheon Books, 1969. Pp. 205. $5.95.

MILLER, ZANE L. *Boss Cox's Cincinnati*. New York: Oxford University Press, 1968. Pp. xii+301. $7.50.

MOL, J. J. *The Breaking of Traditions: Theological Convictions in Colonial America*. Berkeley: Glendessary Press, 1968. Pp. 94.

MONTAGU, ASHLEY. *Man: His First Two Million Years*. New York: Columbia University Press, 1969. Pp. vi+262. $6.95.

MOORE, DANIEL G. *Enter without Knocking*. Tucson: University of Arizona Press, 1969. Pp. ix+261. $6.50.

MOYNIHAN, DANIEL P. *Maximum Feasible Misunderstanding: Community Action in the War on Poverty*. New York: Free Press, 1969. Pp. xxi+218. $5.85.

MUSGRAVE, P. W. *Society and Education in England since 1800*. New York: Barnes & Noble, 1968. Pp. vii+152. $2.25 (paper).

NATIONAL ADVISORY COMMISSION ON CIVIL DISORDERS. *Supplemental Studies*. New York: Frederick A. Praeger, Inc., 1968. Pp. x+248. $10.00.

NATIONAL CONFERENCE ON SOCIAL WELFARE. *The Social Welfare Forum, 1968*. New York: Columbia University Press, 1968. Pp. xxv+236. $6.00.

NATIONAL CONFERENCE ON SOCIAL WELFARE. *Social Work Practice, 1968*. New York: Columbia University Press, 1968. Pp. xv+207. $6.00.

NATIONAL FAMILY PLANNING BOARD OF MALAYSIA. *Report on West Malaysian Family Survey, 1966–1967*. Ann Arbor: Obtainable from Population Studies Center, University of Michigan. Pp. xliv+534. $4.00.

NATIONAL SCIENCE FOUNDATION. *Human Dimensions of the Atmosphere.* Washington: Government Printing Office, 1968. Pp. vi+174. $1.50.

NEUGARTEN, BERNICE L. (ed.). *Middle Age and Aging.* Chicago: University of Chicago Press, 1968. Pp. xiii+596. $15.00 (cloth); $7.50 (paper).

NOWLIS, HELEN H. *Drugs on the College Campus.* Garden City, N.Y.: Doubleday & Co., 1969. Pp. xvi+144. $0.95 (paper).

NUTINI, HUGO G. *San Bernardino Contla: Marriage and Family Structure in a Tlaxcalan Municipio.* Pittsburgh: University of Pittsburgh Press, 1969. Pp. xii+420. $14.95.

OEHLING, HERMANN. *La Funcion Politica del Ejercito.* Madrid: Institutio de Estudios Politicos, 1967. Pp. xix+417. (Paper.)

OSOFSKY, HOWARD J. *The Pregnant Teen-ager.* Springfield, Ill.: Charles C. Thomas, 1968. Pp. xii+124. $6.75.

OWEN, CAROL. *Social Stratification.* New York: Humanities Press, 1968. Pp. xii+99. $2.75 (cloth); $1.50 (paper).

PAHL, R. E. (ed.). *Readings in Urban Sociology.* Oxford: Pergamon Press, 1968. Pp. xiii+333. $7.00 (cloth); $5.50 (paper).

PAKISTAN SOCIOLOGICAL ASSOCIATION. *Pakistan Sociological Perspectives.* Lahore: University of the Punjab, 1968. Pp. viii+277. $8.00.

PARKER, BEULAH, M.D. *Mental Health In-Service Training.* New York: International Universities Press, 1968. Pp. 132. $4.00.

PAULSTON, ROLLAND G. *Educational Change in Sweden.* New York: Teacher's College Press, 1968. Pp. x+193.

PELLING, HENRY. *Popular Politics and Society in Late Victorian England.* New York: St. Martin's Press, 1968. Pp. 188. $7.00.

PELLING, HENRY. *A Short History of the Labour Party.* 3d ed. New York: St. Martin's Press, 1968. $2.75 (paper).

PERISTIANY, J. G. (ed.). *Contributions to Mediterranean Sociology.* Paris: Mouton & Co., 1968. Pp. 349. NF. 45 (paper).

PETERSON JAMES A. (ed.). *Marriage and Family Counseling: Perspective and Prospect.* New York: Association Press, 1968. Pp. 188. $7.95.

PINTÉR, E. *Wohlstandsflüchtlinge: Eine soziálpsychiatriche Studie an ungarischen Flüchtlingen in der Schweiz.* Basel: S. Karger, 1969. Pp. vii +220. (Paper.)

PODELL, LAWRENCE. *Families on Welfare in New York City.* Center for the Study of Urban Problems. New York: City University of New York. Pp. xxiii+117. (Paper.)

PODELL, LAWRENCE. *Professional Social Workers in Public Social Welfare.* New York: Center for the Study of Urban Problems, City University of New York. Pp. xvii+80. (Paper.)

PORTEUS, STANLEY D. *A Psychology of Sorts.* Palo Alto, Calif.: Pacific Books, 1969. Pp. x+325. $7.50.

PRESVELOU, CLIO. *Sociologie de la Consommation Familiale.* Brussels: Les Éditions Vie Ouvriere, 1968. Pp. viii+319. $5.50 (paper).

PRINCE, RAYMOND (ed.). *Trance and Possession States.* Montreal: R. M. Bucke Memorial Society, 1968. Pp. xii+200. $4.00 (paper).

PRYOR, FREDERICK L. *Public Expenditures in Communist and Capitalist Countries.* Homewood, Ill.: Richard D. Irwin, 1968. Pp. 543. $8.50.

RADLOFF, ROLAND, and HELMREICH, ROBERT. *Groups under Stress: Psychological Research in SEALAB II.* New York: Appleton-Century-Crofts, 1968. Pp. xi+259. $5.50.

RAINA, PETER K. *Die Krise der Intellektuellen.* Olten und Freiburg im Breisgau: Walter-Verlag, 1968. Pp. 128.

REPS, JOHN W. *Town Planning in Frontier America.* Princeton, N.J.: Princeton University Press, 1969. Pp. 473. $13.50.

RIESSMAN, FRANK. *Strategies against Poverty.* New York: Random House, 1969. Pp. x+114. $6.95.

RINGER, FRITZ K. *The Decline of the German Mandarins.* Cambridge, Mass.: Harvard University Press, 1969. Pp. 528. $13.50.

RISCHIN, MOSES. *The American Gospel of Success.* Chicago: Quadrangle Books, 1968. Pp. 429. $2.95 (paper).

ROGERS, ROLF E. *Max Weber's Ideal Type Theory.* New York: Philosophical Library, 1969. Pp. x+109. $4.50.

ROSENTHAL, ALAN. *Strengthening the Maryland Legislature.* New Brunswick, N.J.: Rutgers University Press, 1968. Pp. xi+191. $2.95 (paper).

ROURKE, FRANCIS E. *Bureaucracy, Politics, and Public Policy.* Boston: Little, Brown & Co., 1969. Pp. ix+173. (Paper.)

RUBIN, JOAN. *National Bilingualism in Paraguay.* The Hague: Mouton, 1968. Pp. 135. Gld. 32.

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RUDGE, PETER F. *Ministry and Management.* New York: Barnes & Noble 1968. Pp. xvi+191. $5.75 (cloth); $3.00 (paper).

RUPP, CHARLES, M.D. *Mind as a Tissue.* New York: Harper & Row, 1968. Pp. x+357. $16.50.

RUSSO, J. ROBERT (ed.). *Amphetamine Abuse.* Springfield, Ill.: Charles C. Thomas, 1968. Pp. xii+159. $7.50.

SANDSTROM, C. I. *The Psychology of Childhood and Adolescence.* Middlesex: Penguin Books, 1966. Pp. 259. $1.65 (paper).

SCHORR, ALVIN L. *Explorations in Social Policy*. New York: Basic Books, 1968. Pp. x+308. $6.95.

SCHULZ, ESTHER, and WILLIAMS, SALLY R. *Family Life and Sex Education: Curriculum and Instruction*. New York: Harcourt, Brace & World, 1969. Pp. xiv+281. $3.95 (paper).

SCHWAB, JOSEPH J. *College Curriculum and Protest*. Chicago: University of Chicago Press, 1969. Pp. 303. $4.95.

SCOTT, FRANKLIN D. (ed.). *World Migrations in Modern Times*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968. Pp. xiii+177. $4.95.

SCRIMSHAW, NEVIN S., and GORDON, JOHN E. (eds.). *Malnutrition, Learning, and Behavior: Proceedings of an International Conference Co-sponsored by the Nutrition Foundation, Inc., and the Massachusetts Institute of Technology held at Cambridge, Mass., March 1 to 3, 1967*. Cambridge, Mass.: M.I.T. Press, 1968. Pp. xiii+566. $12.50.

SENIOR, CLARENCE, and BERNARD, WILLIAM S. (eds.). *Toward Cultural Democracy*. New York: Associated Educational Services Corp., 1968. Pp. 173. $3.50 (paper).

SHANNON, W. WAYNE. *Party, Constituency and Congressional Voting*. Baton Rouge: Louisiana State University Press, 1969. Pp. xii+202. $6.50.

SHAPIRO, DAVID S.; MAHOLICK, LEONARD T., M.D.; BREWER, EARL C. D.; and ROBERTSON, RICHARD N. *The Mental Health Counselor in the Community: Training of Physicians and Ministers*. Springfield, Ill.: Charles C. Thomas, 1968. Pp. xii+207. $12.75.

SHAW, CLIFFORD R., and MCKAY, HENRY D. *Juvenile Delinquency and Urban Areas*. Rev. ed. Chicago: University of Chicago Press, 1969. Pp. liv+394. $14.75.

SHERIFF, DON R. *Administrative Behavior: A Quantitative Case Study of Six Organizations*. CLM Monograph Series, No. 12. Iowa City: Center for Labor and Management, College of Business Administration, University of Iowa, 1969. Pp. v+40. (Paper.)

SHIPMAN, M. D. *Sociology of the School*. New York: Humanities Press, 1969. $3.00 (cloth); $2.25 (paper).

SHORT, JAMES F., JR. (ed.). *Gang Delinquency and Delinquent Subcultures*. New York: Harper & Row, 1968. Pp. viii+328. $3.90 (paper).

SILBERMANN, ALPHONS. *Les Principes de la Sociologie de la Musique*. Geneva: Librairie Droz, 1968. Pp. 190.

SILVERMAN, CHARLOTTE., M.D. *The Epidemiology of Depression*. Baltimore: Johns Hopkins Press, 1968. Pp. xviii+184. $7.50.

SOEN, DAN (ed.). *Urban Renewal: An Interdisciplinary Symposium*. Tel Aviv: Institute for Planning and Development, 1968. Pp. 259. (Paper.)

SORLIN, PIERRE. *The Soviet People and Their Society from 1917 to the Present*. New York: Frederick A. Praeger, Inc., 1969. Pp. x+293. $7.00 (cloth); $2.95 (paper).

SPARGO, JOHN. *The Bitter Cry of the Children.* With an introduction by WALTER I. TRATTNER and an introduction to the 1906 edition by ROBERT HUNTER. Chicago: Quadrangle Books, 1968. Pp. xvli+336. $2.95 (paper).

SPECIAL COMMITTEE ON HIGHER EDUCATION. *Second Interim Report.* Hong Kong: S. Young, Government Printer at the Government Press, 1968. Pp. iii+126. $9.50 (paper).

SPITZ, DAVID (ed.). *Robert M. MacIver: Politics and Society.* New York: Atherton Press, 1969. Pp. xx+571.

SPRADLEY, JAMES P. (ed.). *Guests Never Leave Hungry: The Autobiography of James Sewid, a Kwakiutl Indian.* New Haven, Conn.: Yale University Press, 1969. Pp. 310. $10.00.

STEPHENSON, JOHN B. *Shiloh: A Mountain Community.* Lexington: University of Kentucky Press, 1968. Pp. xi+232. $7.50.

STEVENSON, HAROLD W.; HALE, GORDON A.; KLEIN, ROBERT E.; and MILLER, LEON K. *Interrelations and Correlates in Children's Learning and Problem Solving.* Monographs of the Society for Research in Child Development, Vol. 33, No. 7. Chicago: University of Chicago Press, 1968. Pp. 68. $3.00 (paper).

TANTILLO, CHARLES. *Strengthening the Rhode Island Legislature.* New Brunswick, N.J.: Rutgers University Press, 1968. Pp. viii+98. $2.95 (paper).

TAUB, RICHARD P. *Bureaucrats under Stress: Administrators and Administration in an Indian State.* Berkeley: University of California Press, 1969. Pp. x+235. $6.75.

TENDLER, JUDITH. *Electric Power in Brazil: Entrepreneurship and the Public Sector.* Cambridge, Mass.: Harvard University Press, 1968. Pp. xiv+264. $10.00.

TENENBAUM, SAMUEL. *A Psychologist Looks at Marriage.* New York: A. S. Barnes & Co., 1968. Pp. 405. $6.95.

TOURAINE, ALAIN. *Le Mouvement de Mai ou le Communisme Utopique: La Première Analyse Sociologique.* Paris: Éditions du Seuil, 1968. Pp. 302. (Paper.)

TRIMINGHAM, J. SPENCER. *The Influence of Islam upon Africa.* New York: Frederick A. Praeger, Inc., 1968. Pp. x+159. $5.00.

TYERMAN, MAURICE J. *Truancy.* London: University of London Press, 1968. Pp. 128. 25s.

ULLMANN, LEONARD P., and KRASNER, LEONARD. *A Psychological Approach to Abnormal Behavior.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. xiii+687.

VALENTINE, CHARLES A. *Culture and Poverty.* Chicago: University of Chicago Press, 1968. Pp. ix+216. $5.95.

VALENTINE, VICTOR F., and VALLEE, FRANK G. *Eskimo of the Canadian Arctic*. Princeton, N.J.: D. Van Nostrand Co., 1968. Pp. xv+241. $2.75.

VANCE, RUPERT B. *Human Geography of the South: A Study in Regional Resources and Human Adequacy*. 2d ed. New York: Russell & Russell, 1968. Pp. xviii+596. $15.00.

VANDENBERG, STEVEN (ed.). *Progress in Human Behavior: Genetics*. Baltimore: Johns Hopkins Press, 1968. Pp. xi+ 356. $12.50.

VICKERS, GEOFFREY. *Value Systems and Social Process*. New York: Basic Books, 1968. Pp. xxii+217. $6.50.

WALTERS, A. A. *The Economics of Road User Charges*. World Bank Staff Occasional Papers, No. 5. Baltimore: Johns Hopkins Press, 1968. Pp. xiii+243. $5.00 (paper).

WARDEN, SANDRA A. *The Leftouts: Disadvantaged Children in Heterogeneous Schools*. New York: Holt, Rinehart & Winston, 1968. Pp. xiv+208. $3.95 (paper).

WATERS, JOHN J., JR. *The Otis Family in Provincial and Revolutionary Massachusetts*. Published for the Institute of Early American History and Culture at Williamsburg, Virginia. Chapel Hill.: University of North Carolina Press, 1968. Pp. xi+221. $6.95.

WATT, W. MONTGOMERY. *What Is Islam?* New York: Frederick A. Praeger, Inc., 1968. Pp. x+256. $6.50.

WATTS, ALAN W. *The Wisdom of Insecurity*. New York: Vintage Books, 1968. Pp. 152. $1.45 (paper).

WEINBERG, ALVIN M. *Reflections on Big Science*. Cambridge, Mass.: M.I.T. Press, 1968. Pp. ix+182. $1.95 (paper).

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WIEHN, ERHARD. *Theorien der sozialen Schichtung*. München: R. Piper & Co., 1968. Pp. 182.

WILLEMS, EDWIN P., and RAUSH, HAROLD L. (eds.). *Naturalistic Viewpoints in Psychological Research*. New York: Holt, Rinehart & Winston, 1969. Pp. x+294. $7.50.

WILLNER, DOROTHY. *Nation-building and Community in Israel*. Princeton, N.J.: Princeton University Press, 1969. Pp. xi+478. $10.00.

WILSON, BILLY RAY (ed.). *Environment, the University, and the Welfare of Man.* Philadelphia: J. B. Lippincott Co., 1969. Pp. 184. $5.95.

WILSON, GODFREY and MONICA. *The Analysis of Social Change: Based on Observations in Central Africa.* Cambridge: Cambridge University Press, 1968. Pp. 177. $3.00 (cloth); $1.45 (paper).

WINSLOW, ROBERT W. *Crime in a Free Society.* Selections from the President's Commission on Law Enforcement and the Administration of Justice. Belmont, Calif.: Dickenson Publishing Co., 1968. Pp. vi+378. $4.95 (paper).

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WINTHROP, HENRY. *Ventures in Social Interpretation.* New York: Appleton-Century-Crofts, 1968. Pp. xvi+551. $5.75 (paper).

WIPPLER, R. *Sociale Determinanten van het Vrijetijds Gedrag.* Netherlands: Van Gorcum, 1968. Pp. 188.

WOLFGANG, MARVIN E. (ed.). *Crime and Culture: Essays in Honor of Thorsten Sellin.* New York: John Wiley & Sons, 1968. Pp. xv+462. $11.50.

WOOLDRIDGE, POWHATAN J.; SKIPPER, JAMES K., JR.; and LEONARD, ROBERT C. *Behavioral Science, Social Practice, and the Nursing Profession.* Cleveland: The Press of Case Western Reserve University, 1968. Pp. x+108. $5.25.

WRENCH, DAVID F. *Psychology: A Social Approach.* New York: McGraw-Hill Book Co., 1969. Pp. xiii+400. $7.95.

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IN THIS ISSUE

ROSALIO WENCES is assistant professor in the Department of Sociology and Anthropology at the University of Connecticut. He is currently working on a book entitled *Comparative Analysis of the Distribution of Political Power* and is engaged in research on student radicalism in Mexico.

JOEL I. NELSON and IRVING TALLMAN are associate professors of sociology at the University of Minnesota. Their paper in this issue is an initial statement from a joint project on political socialization.

ALEX INKELES is professor of sociology and director of research on the social and cultural aspects of development for Harvard's Center for International Affairs. His recent publications include *What is Sociology?* and *Social Change in Soviet Russia*. With David H. Smith, he is co-authoring *Becoming Modern*.

HARVEY MOLOTCH is assistant professor of sociology at the University of California, Santa Barbara. His interests have been in the areas of human ecology, community study, and the mass media. He is active in the Radical Caucus of the ASA and is attempting to promote and carry out research consistent with a radical approach to the study of social life.

ALAN E. BAYER was formerly the director of sociological studies at Project TALENT and is presently a research sociologist at the American Council on Education. He is co-author of *Human Resources and Higher Education*, published in the summer of 1969 by the Russell Sage Foundation. His current research focuses on factors affecting educational progress, part of which is reported here, and is based on the large-scale national research programs of Project TALENT, a longitudinal survey of 1960 high school students, and of the American Council on Education, a longitudinal study of cohorts of recent college entrants.

HERBERT L. COSTNER is associate professor of sociology at the University of Washington. He is currently engaged in a study of public reactions to crime and the police. The current article grew out of earlier explorations of causal models and attempts to test them.

HUBERT M. BLALOCK, JR., is professor of sociology at the University of North Carolina at Chapel Hill. He is currently interested in general methodology, theory building, and social power. His book *Theory Construction: From Verbal to Mathematical Formulations* has recently been published by Prentice-Hall. He is also author of *Toward a Theory of Minority-Group Relations* and *Causal Inferences in Nonexperimental Research*.

Information for Contributors

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Goode, W. J. 1967. "The Protection of the Inept." *American Sociological Review* 32 (February): 5–19.

Moore, Wilbert E., and Arnold S. Feldman. 1960. *Labor Commitment and Social Change in Developing Areas*. New York: Social Science Research Council.

Sanford, Nevitt, ed. 1962. *The American College*. New York: Wiley.

Electoral Participation and the Occupational Composition of Cabinets and Parliaments[1]

Rosalio Wences

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This is a comparative analysis of the occupational composition of cabinets and parliaments of several countries. The following hypothesis is tested and accepted: the higher the electoral participation, the lower the proportion of political leaders recruited from business and legal occupations, but the higher the relative number recruited from other professions and from labor and party bureaucracies. It was also found that, by and large, members of parliament and cabinet ministers are not recruited from the lower middle and lower classes, even though token recruitment of the former into parliaments, but not into cabinets, was the case in most of the countries investigated.

In recent years social scientists (Rossi 1966; Clark 1967, 1968; Bell, Hill, and Wright 1961; Ehrlich 1961; Walton 1966) have emphasized the importance of comparative studies in order to determine the conditions which give rise to different kinds of "power structures." However, most comparative research in this field has been devoted to community studies, and little attention has been paid to larger political systems beyond single case studies. This exploratory analysis is an attempt to explain the variation in the occupational composition of cabinets and parliaments.

Some have suggested (Dahl 1961, p. 234; Bendix 1964, p. 88; Rossi 1966, p. 184) that the extension, and exercise thereof, of political rights to larger segments of the population, especially the lower classes, is one of the social mechanisms whereby political office may become more accessible to groups previously excluded from the exercise of political authority. On this basis I propose to test the following hypothesis: the higher the electoral participation, the lower the proportion of political leaders recruited from occupational groups from which they have usually been recruited; furthermore, the higher the electoral involvement, the higher the percentage of political leaders drawn from occupational groups from which they have not been traditionally recruited. I assume that, depending on the historical circumstances, political leaders have traditionally been landowners, businessmen, lawyers, civil servants, and military officers. Of these, only the recruitment of businessmen and lawyers will be analyzed, and the other groups will sometimes be brought into the discussion for supplementary

purposes.[2] Occupational groups from which political leaders have not been traditionally recruited include nonlawyer professionals who lack legal skills and the economic resources of landowners and businessmen; labor leaders who depend on their union members for economic, organizational, and electoral resources necessary to run for office; party bureaucrats who came into existence with the rise of what Duverger (1963) calls the mass party; and white-collar and manual workers who constitute the lower middle and lower classes, respectively.

THE DATA

This is a secondary analysis of data gathered by the investigators identified in the table sources. The selection of countries was based on the availability of data rather than random sampling. Consequently, statistical tests cannot be used to make inferences about a universe of countries; nevertheless, they are used here for heuristic purposes only, and without the pretense of generalizing beyond these cases.[3]

Electoral participation is computed from as many elections as possible which coincide with the period of time during which leaders were studied, and by using the voting-age population as the percentage base, rather than the number of enfranchised individuals.[4] The nineteen political systems included in the study vary in voting rates, from high to low, as follows: Italy, New Zealand, Argentina, West Germany, Turkey, Israel, Sweden, Weimar Germany, France, Australia, Great Britain, Switzerland, Japan, Canada,

[2] The reason for omitting these groups from this analysis is that the need for control variables is much greater in their case; for example, in the case of landowners there is the need to control, at least, for the degree of industrialization and for the presence or absence of exclusively agrarian parties; in the case of civil servants there is need to control for the degree of bureaucratization of political bodies and for the presence or absence of laws which restrict or enhance their political office seeking.

[3] The dependent variable is the proportion of political leaders from a given occupation, and the independent variable is electoral participation. Therefore, if level of measurement were the only criterion determining the type of analysis to be carried out, the appropriate procedure would be to use the product-moment coefficient of correlation. However, two other assumptions for the use of parametric tests are probably not satisfied; according to Siegel (1956, p. 19), "observations must be drawn from normally distributed populations ... [and] these populations must have the same variance." For this reason, I have chosen to analyze the data by means of Spearman's rho.

[4] The sources from which voting turnout was computed are found in Appendix A of Wences (1967). The mean voting turnout was computed for presidential elections only, if they do not coincide with parliamentary ones. The elections included fall in the following periods of time: Argentina, 1946–58; Australia, 1903–58; Ceylon, 1947–60; France, 1902–65; Weimar Germany, 1918–33; West Germany, 1949–65; India, 1957–62; Ireland, 1922–48; Israel, 1949–61; Italy, 1948–63; Japan, 1947–60; Mexico, 1917–58; New Zealand, 1935–60; Sweden, 1948–60; Switzerland, 1919–47; Turkey, 1950–61; and the United States, 1900–64. The only exception made in the computations was Switzerland, where women were excluded because they are disenfranchised. Since this inequality cuts across socioeconomic lines, I felt justified in omitting them.

Ireland, Ceylon, the United States, Mexico, and India. Electoral involvement ranges from a high of about 90 percent in the first three countries to a low of about 50 percent in the last two, while the median is 79 percent.

Although my concern is to try to explain the cross-sectional variation in the occupational composition of cabinets and parliaments, not the variation in voting turnout, the latter should be briefly explored. In the first place, data about Italian and Argentine leaders were gathered when voting was compulsory; and their electoral participation is therefore high. In Australia compulsory voting began with the 1925 election, but her voting rate is classified here as medium because it was computed for previous elections to coincide with the period of time during which political leaders were studied. Since 1925 voting turnout in Australia has been about 90 percent, as in Italy and Argentina. But, as demonstrated by New Zealand, compulsory voting is not a necessary condition for a high public involvement in the electoral process.

Second, in view of the positive association between voting and social class (as summarized by Milbrath 1965, pp. 110–28), other conditions being equal, countries with different class structures ought to differ in electoral participation; those with larger lower classes ought to be low in voting rates. However, Russett et al. (1964; p. 83) report that, whereas "in the United States and Western Europe it has generally been found that voting participation is highest among citizens of high education, income, and social status. . . . The most cursory examination [of data from 100 countries] will show that this finding *within* countries does not apply in any consistent way *between* countries. There is a clear correlation between per capita G.N.P. and electoral participation (r = .47) but there are many obvious exceptions." It is assumed that a high income per capita indicates a smaller lower class. The relationship between per capita income and electoral participation found in my sample is graphically portrayed in figure 1, but the correlation is only 0.18. As expected, compulsory voting results in very high voting rates, independent of income per capita. Furthermore, voluntary voting registration and residence rules found in the United States override the advantage of the highest income per capita, lowering electoral participation. If we exclude Italy, Argentina, and the United States, the correlation jumps to 0.47, but still income per capita explains only a small part of the variance in electoral participation.

CABINETS

Data about the occupational composition of cabinets from fourteen countries are analyzed in table 1. The correlations between electoral participation and the percentage of cabinet ministers who are (1) businessmen and (2) labor leaders and party bureaucrats (combined by several researchers) are not statistically significant, but in the case of lawyers the correlation is negative and significant and in the case of other professionals positive and also significant. In other words, the higher the voting turnout, the lower the relative number of ministers recruited from the legal profession, and the

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larger the proportion drawn from other professions. The recruitment of lawyers is more accurately predicted on the basis of electoral involvement in the United States, Canada, Ceylon, Mexico, France, Weimar Germany, Turkey, West Germany, and New Zealand. India, Australia, Argentina, and Italy contribute most of the variance left unexplained. On the other hand, Mexico, Italy, Weimar Germany, and New Zealand contribute most of the unexplained variance vis-à-vis other professionals; and more accurate predictions are made for the other countries.

The most striking finding regarding labor leaders and party bureaucrats is not only the lack of a significant correlation but also that in seven
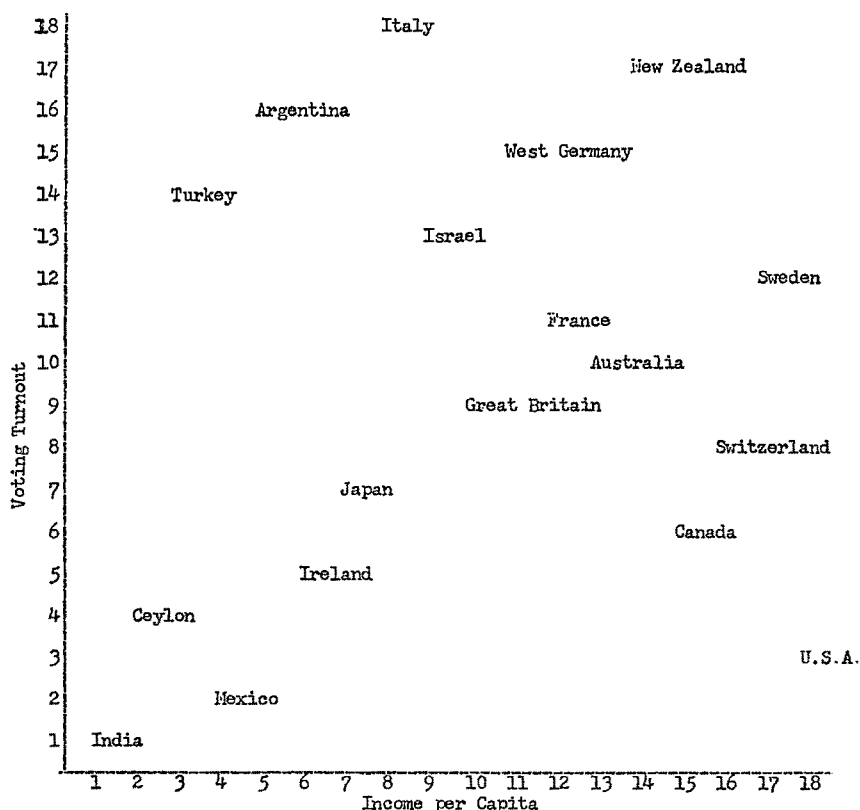

FIG. 1.—Correlation between per capita income and electoral participation (in ranks; rank 1 = lowest value). Sources: for income per capita, International Bank for Reconstruction and Development (1968); for voting, see n. 4. Weimar Germany is not included. The income per capita is as follows (in U.S. dollars): Italy, $1,030; New Zealand, $1,930; Argentina, $780; West Germany, $1,700; Turkey, $280; Israel, $1,160; Sweden, $2,270; France, $1,730; Australia, $1,840; Great Britain, $1,620; Switzerland, $2,250; Japan, $860; Canada, $2,240; Ireland, $850; Ceylon, $150; United States, $3,520; Mexico, $470; and India, $90.

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countries—Argentina, West Germany, Ceylon, Turkey, Canada, the United States, and Mexico—they have, by and large, no access into the highest political office, regardless of voting rates. Their recruitment, as expected, is heavily dependent on the electoral success of left-wing parties closely identified with labor organizations. For example, the German Social Demo-

TABLE 1

The Correlations between Electoral Participation and the Proportion of Cabinet Ministers Who Are (1) Businessmen, (2) Lawyers, (3) Other Professionals, and (4) Labor Leaders and Party Bureaucrats

COUNTRY	VOTING TURNOUT (%)*	N†	CABINET MINISTERS (%) WHO ARE			
			Business-men	Lawyers	Other Professionals	Labor Leaders and Party Bureaucrats
Italy.............	93	102	8	33	40	11
New Zealand.....	92	416	18	18	21	14
Argentina........	87	162	2	37	32	2
West Germany...	85	44	23	16	24	2
Turkey..........	84	298	5	19	26	0
Weimar Germany........	80	92	16	31	12	11
France..........	80	427	12	37	38	...‡
Australia........	79	243	16	16	21	16
Great Britain....	78	185	25	...§	...§	15
Canada..........	72	88	18	60	8	2
Ceylon..........	64	152	28‖	40	16	0
United States....	60	176	21	70	4	0
Mexico..........	54	33	0	39	27	3
India............	50	160	4	29	16	14
Mean.........	...	...	13.8	34.2	21.2	6.9
Rho	...	...	−.02	−.45	.52	.10
Level of significance#....	...	...	N.S.	.05	.04	N.S.
FOR COUNTRIES WITH LARGE WESTERN EUROPEAN POPULATIONS						
Rho..........	...	...	−.54	...	...	...
Level of significance.....	...	...	.05	...	...	...

Sources.—Italy, 1946–63 (Lotti 1963, p. 198); New Zealand, 1856–1935 (Webb 1940, pp. 62–63), 1935–57 (Campbell 1958, p. 66); Argentina, 1947–60 (Silvert 1966, pp. 98–99); West Germany, 1949–60 (Schmidt 1963, p. 175); Turkey, 1920–54 (Frey 1965, p. 283); Weimar Germany, 1918–33 (Knight 1952, p. 41); France, 1898–1940 (Dogan 1961, tables following p. 72); Australia, 1909–59 (Encel 1961, p. 32); Great Britain, 1916–55 (Guttsman 1965, p. 107); Canada, 1940–60 (Porter 1965, p. 390); Ceylon, 1947–60 (Singer 1964, p. 171); United States, 1877–1934 (Matthews 1954, p. 30); Mexico, 1924–28, 1930–32, 1946–52 (Portes Gil 1961, pp. 552, 559, 573); India, 1952–62 (Verma 1965, p. 155).

* See text, n. 4, for the elections from which turnout was computed.

† N may refer to seats instead of persons when data were reported for each cabinet separately.

‡ Combined with white-collar workers in the source.

§ Lawyers were combined with other professionals in the source.

‖ Includes owners of rubber and tea plantations.

When N is equal to or larger than 10, Blalock (1960, pp. 318–19) suggests computing

$$z = \frac{rho}{1/\sqrt{(N-1)}} .$$

cratic party was more successful in its quest for cabinet positions during the Weimar Republic than from 1949 to 1960; consequently, in the first period ten of the ninety-two ministers were union officials, contrasted with only one out of forty-four in the latter.

If we pay close attention to the recruitment of businessmen, some interesting findings emerge which clarify why there is no significant correlation when all the countries are included in the analysis. In India and Mexico electoral participation is extremely low, and yet only 4 percent of the Indian cabinet ministers and none of the Mexican are drawn from the business world, thus completely upsetting the anticipated correlation. If we narrow our line of inquiry to countries with large western European populations, where voting rights have been exercised for a longer period of time and where there is a higher degree of industrialization—thus eliminating from the comparison India, Mexico, Ceylon, and Turkey—we learn that the correlation is negative and statistically significant. Here we are confronted with the possibility that political recruitment in these countries may be confined more to landowners than to businessmen because of the importance of agriculture in the economy. In Ceylon businessmen are combined with landowners because some of the latter are also traders in rubber and tea. At any rate, 28 percent of the cabinet ministers are businessmen or landowners (one of the highest percentages), and electoral participation is low. In India, although only 4 percent are businessmen, 17 percent are landowners; and their combined numerical strength is comparatively high as predicted by electoral participation. In Turkey 5 percent are businessmen and 4 percent are landowners; and in Mexico there are neither businessmen nor landowners in the cabinet. It is apparent, then, that only for Turkey and Mexico is electoral participation irrelevant for the recruitment of businessmen or landowners. This may be due to the policies of the dominant political party, the Party of Revolutionary Institutions in Mexico and the Republican People's Party in Turkey, which obstruct both businessmen and landowners from holding political office. Frey (1965, p. 123) states that "after consideration of their individual dossiers, it is hard to avoid the conception that the traders were included in the assembly most reluctantly and certainly minimally during the Republican People's Party era [1920–50]." In Mexico the Party Revolutionary Institutions is composed of labor, peasant, and popular sectors. The latter includes mainly white-collar unions, and there is no sector for businessmen and landowners as such.

Only in three political systems were any cabinet ministers reported as white-collar workers: New Zealand, 7 percent (no distinction was made between white-collar workers and higher civil servants); Weimar Germany and West Germany, 4 percent; and none in the other countries under investigation. Furthermore, no manual workers were reported in any of the cabinets studied. It is evident that a high socioeconomic status is, generally, a necessary condition for recruitment into national cabinets.

PARLIAMENTS

The analysis of parliaments is based on eighteen countries. Table 2 shows that the correlations between electoral participation and the proportion of members of parliament who are businessmen and lawyers are negative, but for other professionals and for labor leaders and party bureaucrats

TABLE 2

THE CORRELATIONS BETWEEN ELECTORAL PARTICIPATION AND THE PROPOR-
TION OF MEMBERS OF PARLIAMENTS WHO ARE (1) BUSINESSMEN, (2) LAW-
YERS, (3) OTHER PROFESSIONALS, AND (4) LABOR LEADERS AND PARTY
BUREAUCRATS

			MEMBERS OF PARLIAMENTS (%) WHO ARE			
COUNTRY	VOTING TURNOUT (%)*	N†	Busi- ness- men	Lawyers	Other Profes- sionals	Labor Leaders and Party Bureaucrats
Italy............	93	2,406	9	26	29	24
New Zealand.....	92	873	12	11	17	18
West Germany...	85	1,311	12	7	14	23
Turkey..........	84	2,210	15	18	29	0
Israel...........	83	480	3‡	8	26	...‡
Sweden..........	81	385	9	23§	18	17
Weimar Ger- many........	80	?	8	3	17	31
France..........	80	4,828	18	17	31	8‖
Australia........	79	2,342	15	13	12	13
Great Britain....	78	5,587	20	20	29	19
Switzerland......	76	383	11	17	15	35
Japan...........	74	2,121	49	12	12	15
Canada..........	72	604	20	37	15	3
Ireland..........	71	517	14	9	20	11
Ceylon..........	64	390	21	23	15	5
United States....	60	544	29	56	13	2
Mexico..........	54	162	...#	28	29	...#
India............	50	1,406	9	23	15	13
Mean.........	...	...	16.1	19.5	19.8	14.8
Rho..........	...	...	−.47	−.45	.30	.41
Level of sig- nificance.....	...	...	.03	.03	.10	.05

SOURCES.—Italy, 1946–58 (Lotti 1963, p. 161); New Zealand, 1911–35 (Webb 1940, pp. 42–47), 1935–60 (Mitchell 1961, p. 33), 1960– (Mitchell 1962, p. 145); West Germany, 1950 (Kirchheimer 1950, p. 597), 1957 (Hartenstein and Liepelt 1962, p. 50), 1961 (Kirchheimer 1966, p. 431); Turkey, 1920–57 (Frey 1965, p. 80); Israel, 1949–59 (Akzin 1961, p. 574); Sweden, 1955 (Andrén 1961, p. 58); Weimar Germany, 1929 (Kirchheimer 1950, p. 597); France, 1898–1958 (Dogan 1961, tables following p. 72), 1958–62 (Dogan 1960, p. 267), 1962–67 (Dogan 1965, p. 431); Australia, 1901–49 (Crisp 1962, p. 62); Great Britain, 1918–35 (Ross 1948, p. 77) 1945–55 (Ross 1955, p. 440), 1955–59 (Butler 1955, p. 43), 1959–64 (Butler and Rose 1960, p. 127), 1964–66 (Butler and King 1965, p. 235); Switzerland, 1935 (Rappard 1936, p. 65), 1966 (Codding 1961, p. 75); Japan, 1947–60 (Ike 1963, p. 230; Scalapino and Masumi 1962, pp. 164–95; Cole 1956, p. 62); Canada, 1945–49 (Laing 1946, pp. 513–14), 1949–53 (Williams 1952, p. 83), 1957–58 (Meisel 1962, p. 129); Ireland, 1922–48 (McCracken 1958, pp. 96–99); Ceylon, 1947–60 (Singer 1964, p. 171); United States, 1949 (Matthews 1954, p. 30); Mexico, 1955–59, Chamber of Deputies (Scott 1959, p. 193); India, 1952–62, Lower House (Verma 1965, p. 71).
* See text, n. 4, for the elections from which turnout was computed.
† N may refer to seats instead of persons when data are reported for each parliament separately.
‡ Business managers are combined with party officials.
§ Lawyers combined with high civil servants.
‖ An additional 19 percent are classified as workers and small shopkeepers.
No data available.

correlations are positive. In other words, the higher the public involvement in electoral politics, the smaller the relative number of parliamentarians recruited from business and legal occupations, but the larger the percentage drawn from other professions and from labor and party bureaucracies.

A large proportion of the variance in the recruitment of businessmen left unexplained by electoral involvement is accounted for by India, where we find the lowest voting turnout and one of the smallest business contingents in the parliament. No Mexican data are available for this particular example, but they would probably add considerably to the unexplained variance, as happened with the cabinets. In the other sixteen countries, however, there is a closer relationship between recruitment of businessmen and electoral involvement. Most of the unexplained variation in the recruitment of lawyers is contributed by Italy and Ireland, and for labor leaders and party bureaucrats by Turkey and Switzerland. In the case of other professionals the unexplained variance is much greater (as indicated by the fact that the level of statistical significance is only .10).

The percentage of members of parliament classified as white-collar collar workers is as follows: France, 7 percent; Italy, 6 percent; Ireland, 3 percent; Great Britain, 3 percent; the United States, 1 percent; New Zealand, less than 1 percent; and none in the other countries. In Weimar Germany 1 percent of the members are classified as either white-collar or manual workers, and in West Germany 3 percent are so classified. In addition to clerical and sales workers, small businessmen should also be considered as lower middle class; and the percentage of parliamentarians recruited from this group is 12 percent in Ireland; 9 percent in New Zealand; 6 percent in Weimar Germany; 5 percent in the Fifth French Republic (but none before); 3 percent in Canada, West Germany, and Sweden; 2 percent in Great Britain, and none in the other countries. In addition, in Australia 19 percent of the members are classified as workers and small shopkeepers. These data show, then, that the lower middle class has more access to the parliament than to the cabinet, even though such access is still largely token. However, for manual workers not even token recruitment is the case.

CONCLUSIONS

This analysis does not tell us anything concerning the behavior of political leaders, since it deals exclusively with the behavior of political systems. As a matter of fact, some sociologists (Bendix and Lipset 1957, p. 80; Mills 1959, p. 280; Rossi 1957, pp. 420–23) have pointed out that there are insurmountable difficulties when we try to explain the behavior of political leaders on the sole basis of their occupational status or some other indicator of social stratification.

The data reveal that, in general, the degree of electoral participation is negatively correlated with the relative number of cabinet ministers and members of parliament recruited from the business and legal occupational groups, but positively with the number of nonlawyer professionals, labor

leaders, and party bureaucrats. The first two groups occupy a larger share of political positions when electoral involvement is low, and the latter when it is high. However, this independent variable explains only a part of the variance of political recruitment; additional causal factors should be taken into consideration,[5] some of which I have suggested. In the first place, a low degree of industrialization may favor the recruitment of landowners over businessmen. Second, the recruitment of certain occupational groups may be hindered if some political parties have no access to a given position; for instance, the chances of finding labor leaders in the cabinet are closely related to the ability of labor or socialist parties to gain power. Third, the policies of the dominant political party in one-party systems may enhance or hinder the recruitment of some occupational groups, independent of electoral participation. Finally, an additional factor which has not been mentioned, but whose relationship to political recruitment can be determined from these data, is the scope of authority of the given political position. For example, the mean percentage of cabinet ministers who are lawyers (table 1) is 34.2 percent and the equivalent figure in the parliaments (table 2) is only 19.5 percent. In the case of labor leaders and party bureaucrats we observe the opposite tendency, whereas no trend is found for either businessmen or other professionals. Other independent variables have been suggested by Rossi (1966), and Clark (1967).

These conclusions are based on a cross-polity analysis rather than on historical evidence from the countries. However, historical data[6] from some political systems covering periods of more than fifty years substantiate our

[5] I have also found (Wences 1967) that political recruitment varies according to party system, electoral system, and the numerical strength of the working class within the major left-wing party.

[6] Guttsman (1965, pp. 38, 84, 103, 107) presents data for the 1830–1955 British cabinets. During 1830–68, 66 percent of the ministers were recruited from the landed nobility; this figure dropped to 43 percent in 1868–86, to 41 percent in 1887–1915, and to 12 percent in 1916–55. Businessmen constituted about one-fourth of the ministers in the last two periods of time mentioned. For the periods prior to 1887, Guttsman combines businessmen with high civil servants, and together they account for 20 percent and 33 percent, respectively, in the first and second periods of time investigated. Lawyers and other professionals were combined; together they accounted for 14, 24, 32, and 37 percent of the ministers, respectively.

Dogan (1960, p. 267; 1961, tables following p. 72; 1965, p. 431) studied the French deputies for 1870–1966. As late as the beginning of the Third Republic (1870s) one deputy out of three was still recruited from the landed nobility; but this number dropped to about 10 percent from 1898 to 1919. The percentage of deputies from the upper bourgeoisie was 40 percent, in the Fourth Republic 18 percent, and in the Fifth Republic also 18 percent. Prior to the Fourth Republic about one-fourth of the deputies were lawyers, and after World War II about 14 percent were lawyers.

Webb (1940, pp. 42–47) and Campbell (1958, p. 66) studied the New Zealand cabinets from 1856 to 1957. From 1856–1935, 21 percent of the ministers were businessmen, 24 percent were lawyers, and 25 percent landowners. From 1935 to 1957 the equivalent figures were 14, 12, and 19 percent, respectively. Dahl (1961, p. 11) finds that in New Haven, Connecticut, from 1784 to 1842 "public office was almost the exclusive prerogative of the patrician families. In the second period (1842–1900) ... the entrepreneurs took over. Since then, the 'ex-plebes' rising out of the working-class or lower-middle class families of immigrant origins have predominated."

conclusion that changes in political recruitment have been closely associated with the extension of political rights to larger segments of the voting-age population, or with high electoral involvement.

It was shown that a high socioeconomic status is, usually, a necessary condition for recruitment into the higher levels of the machinery of the state; nevertheless, token recruitment of lower-middle-class persons into parliaments, but not into cabinets, appears to be the case in most countries included in this study.

REFERENCES

Akzin, Benjamin. 1961. "The Knesset." *International Social Science Journal* 13:567–582.
Andrén, Nils. 1961. *Modern Swedish Government*. Stockholm: Almqvist & Wiksell.
Bendix, Reinhard. 1964. *Nation-Building and Citizenship*. New York: Wiley.
Bendix, Reinhard, and Seymour M. Lipset. 1957. "Political Sociology." *Current Sociology* 6:79–169.
Blalock, Hubert. 1960. *Social Statistics*. New York: McGraw-Hill.
Bell, Wendell, Richard J. Hill, and Charles R. Wright. 1961. *Public Leadership*. San Francisco: Chandler.
Butler, David. 1955. *The British General Election of 1955*. London: Macmillan.
Butler, David, and Anthony King. 1965. *The British General Election of 1964*. London: Macmillan.
Butler, David, and Richard Rose. 1960. *The British General Election of 1959*, London: Macmillan.
Campbell, Peter. 1958. "New Zealand Ministers, 1935–1957," *Political Science* (September): 65–72.
Clark, Terry N. 1967. "Power and Community Structure: Who Governs, Where, and When?" *Sociological Quarterly* 8 (Summer):291–316.
———. 1968. "Community Structure, Decision-Making, Budget Expenditures, and Urban Renewal in 51 American Communities." *American Sociological Review* 33 (August):576–93.
Codding, George Arthur. 1961. *The Federal Government of Switzerland*. Boston: Houghton Mifflin.
Cole, Allan B. 1956. *Japanese Society and Politics*. Boston University Studies in Political Science. Boston: Boston University Press.
Crisp, J. L. 1962. *The Parliamentary Government of the Commonwealth of Australia*. London: Longmans, Green.
Dahl, Robert A. 1961. *Who Governs?* New Haven, Conn.: Yale University Press.
Dogan, Mattei. 1960. "Changement de régime et changement de personnel." In *L'Etablissement de la Cinquième République*. Cahiers de la Fondation nationale des sciences politiques, no. 109. Paris: Colin.
———. 1961. "Political Ascent in a Class Society: French Deputies 1870–1958." In *Political Decision-Makers*, edited by Dwaine Marvick. Glencoe, Ill.: Free Press.
———. 1965. "Note sur le nouveau personnel parlementaire." In *Le Référendum d'octobre et les élections de novembre 1962*. Cahiers de la Fondation nationale des sciences politiques, no. 142. Paris: Colin.
Duverger, Maurice. 1963. *Political Parties*. Translated by Barbara and Robert North. New York: Wiley.
Ehrlich, Howard J. 1961. "Power and Democracy: A Critical Discussion." In *Power and Democracy in America*, edited by William V. D'Antonio and Howard J. Ehrlich. Notre Dame, Ind.: University of Notre Dame Press.
Encel, S. 1961. "The Political Elite in Australia." *Political Studies* 9:16–36.
Frey, Frederick W. 1965. *The Turkish Political Elite*. Cambridge: Massachusetts Institute of Technology Press.
Guttsman, W. L. 1965. *The British Political Elite*. London: Macgibbon & Kee.

Hartenstein, Wolfgang, and Klaus Liepelt. 1962. "Party Members and Party Workers in W. Germany." *Acta Sociologica* 6:43–52.

Ike, Nobutaka. 1963. "Japan." In *Major Governments of Asia*, edited by George M. Kahin. Ithaca, N.Y.: Cornell University Press.

International Bank for Reconstruction and Development. 1968. *World Bank Atlas*. Washington, D.C.: International Bank for Reconstruction & Development.

Kirchheimer, Otto. 1950. "The Composition of the German Bundestag." *Western Political Quarterly* 3 (December):590–601.

———. 1966. "Germany: The Vanishing Opposition." In *Political Oppositions in Western Democracies*, edited by Robert A. Dahl. New Haven, Conn.: Yale University Press.

Knight, Maxwell E. 1952. *The German Executive 1890–1933*. Stanford, Calif.: Stanford University Press.

Laing, Lionel H. 1946. "The Nature of Canada's Parliamentary Representation." *Canadian Journal of Economics and Political Science* 12 (November):509–516.

Lotti, Luigi. 1963. "Il parlamento italiano 1904–1963: rafronto storico." In *Il Parlamento Italiano 1946–1963*, edited by Giovanni Sartori. Milan: Edizioni Scientifiche.

McCracken, J. L. 1958. *Representative Government in Ireland*. London: Oxford University Press.

Matthews, Donald R. 1954. *The Social Background of Political Decision-Makers*. New York: Random House.

Meisel, John. 1962. *The Canadian General Election of 1957*. Toronto: University of Toronto Press.

Milbrath, Lester W. 1965. *Political Participation*. Chicago: Rand McNally.

Mills, C. Wright. 1959. *The Power Elite*. New York: Oxford University Press.

Mitchell, Austin. 1961. "The New Zealand Parliaments of 1935–1960." *Political Science* 13 (March):31–49.

———. 1962. "The Candidates." In *New Zealand Politics in Action*, edited by Robert Chapman et al. London: Oxford University Press.

Porter, John. 1965. *The Vertical Mosaic: An Analysis of Social Class and Power in Canada*. Toronto: University of Toronto Press.

Portes Gil, Emilio. 1961. "Sentido y destino de la revolución mexicana." In *México cincuenta años de la revolución mexicana: la política*. Mexico City: Fondo de Cultura Económica.

Rappard, William E. 1936. *The Government of Switzerland*. New York: Van Nostrand.

Ross, James F. S. 1948. *Parliamentary Representation*. London: Eyre & Spottiswoode.

———. 1955. *Elections and Electors*. London: Eyre & Spottiswoode.

Rossi, Peter H. 1957. "Community Decision-Making." *Administrative Science Quarterly* 7 (March):415–43.

———. 1966. "Power and Community Structure." In *Political Sociology*, edited by Lewis A. Coser. New York: Harper & Row.

Russett, Bruce M., Hayward R. Alker, Jr., Karl W. Deutsch, and Harold D. Lasswell. 1964. *World Handbook of Political and Social Indicators*. New Haven, Conn.: Yale University Press.

Scalapino, Robert A., and Junnosuke Masumi. 1962. *Parties and Politics in Contemporary Japan*. Berkeley: University of California Press.

Schmidt, Hannelore. 1963. "Die deutsche Exekutive 1949–1960." *European Journal of Sociology* 4:166–176.

Scott, Robert E. 1959. *Mexican Government in Transition*. Urbana: University of Illinois Press.

Siegel, Sidney. 1956. *Nonparametric Statistics for the Behavioral Sciences*. New York: McGraw-Hill.

Silvert, Kalman H. 1966. *The Conflict Society: Reaction and Revolution in Latin America*. New York: American Universities Field Staff.

Singer, Marshall R. 1964. *The Emerging Elite: A Study of Political Leadership in Ceylon*. Cambridge: Massachusetts Institute of Technology Press.

Verma, Suresh P. 1965. "Changing Patterns of Parliamentary Leadership in India (1952–1962)." Ph.D. dissertation, University of Iowa.

Walton, John. 1966. "Substance and Artifact: The Current Status of Research on Community Power Structure." *American Journal of Sociology* 71 (January):430–38.

Webb, Leicester. 1940. *Government in New Zealand.* Wellington: Department of Internal Affairs.

Wences, Rosalio. 1967. "Occupational Background of Political Leaders." Ph.D. dissertation, University of Iowa.

Williams, John R. 1952. "Representation in the House of Commons of the Twenty-first Parliament: Party and Province." *Canadian Journal of Economics and Political Science* 18 (February):77–87.

Local-Cosmopolitan Perceptions of Political Conformity: A Specification of Parental Influence[1]

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The utility of a local-cosmopolitan distinction in accounting for why individuals see themselves in agreement with their father's political views is examined with data from a survey of college students. The data reveal the following patterns: (1) cosmopolitan students are more frequently committed to political issues and more inclined to see disparities between their own partisan views and those of their father; (2) locals not only see themselves as generally conforming to their father's political beliefs but are also more disposed to consider changing their own beliefs to maintain harmonious primary group relations; (3) under conditions fostering tension or change in parent-child relations, locals tend to disagree with their father's politics, whereas such conditions do not alter the frequency of perceived disagreement among cosmopolitans. The data generally suggest that the tendency to attribute perceived political agreement with parents to pervasive parental influence and to attribute disagreement to parent-child conflict and adolescent rebellion is valid only for persons maintaining local orientations. It is concluded that future discussions of political socialization may profit from a more careful consideration of the affects of different cognitive styles.

The high level of partisan agreement between parents and children has been attributed to the strength of parental influence in early socialization as well as to apathy and and an absence of controversy in American politics (Hyman 1959, pp. 69–91; Nogee and Levin 1958; McClosky and Dahlgren 1959). As a result of these views, two themes have been stressed in the literature on political socialization. The first sees parent-child agreement on politics as a "natural phenomenon," one to be expected in a relatively non-salient arena of socialization—and, consequently, a normal condition that does not warrant careful examination. A second and related theme is frequently more explicit: if agreement between parents and children on politics is expected as a normal sequence of events, then, when children deviate from parental political views, this deviation may be associated with some disturbance in family relations capable of stimulating rebellion or dissent in a normally unimportant arena of concern (Maccoby, Matthews, and Morton 1954; Middleton and Putney 1963a; Ball 1964). The present paper questions an assumption common to each of these themes—that the family's influence in political socialization is uniformly important for all

individuals. The concepts of local-cosmopolitan orientations are used to illustrate how perceptions of familial influence on a child's political preferences are highly contingent on particular cognitive orientations.

INTRODUCTION

Discussions of discontinuities in family relations and their consequence for political disagreement have taken a variety of forms. Some work has focused on the relation between political rebellion and unpleasant family environments: Lasswell (1930), Maccoby and her colleagues (1954), and Middleton and Putney (1963a), for example, have all stressed the link between an emotionally unhappy childhood and later political disagreement or rebellion. Additional findings have suggested a related theme: where politics is seen as vital to the family's concern, rebellion is heightened (Maccoby, Matthews, and Morton 1954; Lane 1959; Middleton and Putney 1963a).

Similar interpretations of disagreement have been applied to another potentially disruptive aspect of family relations—social and geographical mobility. A number of studies in this regard have shown that upwardly mobile children more frequently affiliate with the Republican party than the Democratic party selected by their working-class parents (Berelson, Lazarsfeld, and McPhee 1966, pp. 90–91; Dodge and Uyeki 1962; Havemann and West 1952, pp. 117–20). Similarly, in the area of geographical mobility, the effects of mobility on political agreement are clearly suggested in Newcomb's (1943) study of Bennington (see also Hyman 1959, pp. 111–15; McClosky and Dahlgren 1959).

Common to these widely held views is the assumption that sensitivity to family influence is similar for every individual. Hence a useful model for the analysis of political conformity: if family relations are disrupted children will tend to disagree with their parents, and if they are not disrupted children will tend to agree with their parents. Yet, in light of the diverse work on dependence and independence in social relationships, there is reason to question this very basic assumption. Strodtbeck's (1958) material on independence in child rearing, Gouldner's (1959) more general comments on autonomy, as well as Merton (1959, pp. 371–79) and Goode's (1960) remarks on insulation from social influence all have criticized the essentially functionalist perspective that individuals (or groups) are equally interdependent. Each has called for specification of the range of variability in interdependence.

The issue of interdependence as it relates to group loyalties and hence to expressions of agreement has, in one area of endeavor, been partially codified around the concepts of localism–cosmopolitanism. Generally, locals have been described as responsive to immediate primary group pressures in contrast to the cosmopolitan's sensitivity to a broader range of impersonal demands (Merton 1959, pp. 371–79). Gouldner (1957; 1958), for example, has shown that faculty committed to professional principles were least likely to express loyalty to a particular college community. Similarly, Blau and Scott (1962) have reported that persons strongly

committed to a local welfare agency were least likely to question agency directives or to consider leaving their present position. Two inferences can be drawn from these studies: (1) family or primary group influence on perceived political agreement may be negligible for persons maintaining a cosmopolitan orientation, and, therefore, (2) ruptures in primary group relations may cause perceptions of disagreement only for those sensitive to these relations, that is, persons maintaining a local orientation.

The present study is an attempt to assess the relationship between local-cosmopolitan orientations among college students and perceptions of agreement with parental political opinions (cf. Stinchcombe 1968 for an alternative discussion of local-cosmopolitan experience and political beliefs). In line with previously cited work, we expect students with a local orientation to be more inclined to express acceptance of their parents' political opinions than students with a cosmopolitan orientation. Greater political conformity is anticipated chiefly because persons holding local orientations should interpret the world in terms of its personal relevance, link these interpretations to primary communities, and hence limit the number of reference groups available to them. Conversely, persons with more cosmopolitan values should tend to be less oriented to their immediate milieu, allowing them a broader range of actual or potential reference groups. Their political opinions should, consequently, be based less on the criterion of what significant others, particularly their parents, think. To the extent that parents are less important criteria in the formation of the cosmopolitan's political preferences, ruptures in family bonds should not bear as much relevance to the formation of these preferences.

The data to be presented will attempt to examine the following questions: (1) Are students with local orientations more inclined than students with cosmopolitan orientations to see themselves as agreeing with their fathers' political party preferences? (2) Is the anticipated overall relationship between local-cosmopolitan orientations and perceived agreement maintained under conditions generally employed as alternate explanations of political agreement in the family?

RESEARCH PROCEDURES

SAMPLE

Data for the study were drawn from questionnaires administered to students enrolled in introductory sociology classes at the University of Minnesota.[2] The questionnaire was completed by 1,374 students. Of these, the majority were from a large urban metropolis and from predominantly white-collar, Protestant families; 90 percent were between the ages of

[2] In that the respondents in no sense constitute a random sample, the use of tests of statistical significance is questionable. If a χ^2 (two-tailed test) is applied, however, then the findings reported in tables 1 and 2 as well as the findings standardized on the test factor in tables 3, 4, and 5 are significant at the .001 level.

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eighteen and twenty-one, and virtually all were white. In that sex differences did not alter any major findings, separate analyses for males and females are not reported.

COGNITIVE ORIENTATIONS

Measures for the independent variable, local and cosmopolitan views, were culled from a larger scale developed by Thielbar (1966). Respondents were asked to indicate their affinity for each of ten separate scale items by checking one of five alternatives ranging from "strongly agree" to "strongly disagree." Subsequent factor analysis of the scale revealed a number of orthogonal factors, among them the dimension considered most closely related to our interpretation of the local-cosmopolitan aspects of an individual's belief system.[3] This factor included the following items:

1. The national debt is similar to an individual's personal debt and should be paid off as soon as possible.
2. I prefer a newspaper that has lots of local news items.
3. Above all else, friendly neighbors make a good town.
4. These days it makes more sense to think of yourself as a citizen of your local community than as a citizen of the world.
5. I wish that we could teach the American way of life to all the underprivileged people of the world so they would be more like us.

Agreement with the items was interpreted as an orientation toward personalizing the environment by means of projecting individualistic and personal conceptions onto complex current events and by underscoring the virtues of the local, friendly community. More generally, the items were taken to reflect a broad affinity for primary group perspectives and relations.[4]

The final summary index was determined by simply cumulating the separate item scores. To isolate relatively pure types from this preliminary version of the scale, the distribution of scores was divided into three groups —cosmopolitans, intermediates, and locals—with the extreme categories each containing approximately 25 percent of the sample.[5] In that the pri-

[3] The intercorrelation matrix was factored using a principal component analysis, and the resulting factors were rotated by means of the varimax method. Given the assumption of linearity required by factor analysis, its use in this instance is taken as nothing more than suggestive.

[4] In a factor analysis of well over 100 items bearing on the concepts of local-cosmopolitan orientations, Thielbar (1966) identified a similar dimension with a nearly identical set of items. He refers to the dimension as "primarycentrism":

"What is suggested here is an orientation to communal norms and primary social relations, and, further, a tendency to interpret the world outside of the sphere of primary communal relations in terms of norms and values most appropriate to primary interaction, e.g., the tendency to view the national debt as analogous to the individual's debt. The desire to teach the American Way indicates a personalizing of complex issues involving institutional and inter-group relations which appear to be very unlike processes of primary interaction and communal life. This concept implies more than is usually implied by ethnocentrism, which is taken to mean interpretation of the world in terms of in-group values. It implies interpretation of the world in terms of primary group values; therefore, the designation 'primarycentrism' seems appropriate" (p. 354).

[5] In that the specific items are intended to reflect a local orientation, cosmopolitanism is,

mary concern of this research was to isolate the effects of dual orientations to the social environment, the analysis will focus on the extreme groups. This may be a necessary step for, unless some understanding is first gained of how the orientations operate in relatively "pure" states, it may be difficult to assess the effects of the more ambiguous intermediate category.

PERCEIVED POLITICAL AGREEMENT

To measure political attitudes, students were asked: "Which of the following comes closest to your own political preferences?" The following forced-choice alternatives were provided:[6]

1. Conservative Republican
2. Middle-of-the-road Republican
3. Liberal Republican
4. Conservative Democrat
5. Middle-of-the-road Democrat
6. Liberal Democrat
7. Socialist
8. No political preference
9. Other_____

At a separate point in the questionnaire, students were asked to estimate from these alternatives the political preferences of their father. Perceived agreement was scored if students checked for their father a category identical to their own position.[7] Persons with no political preference were eliminated from the analysis.[8]

It should be emphasized that the indicators of agreement are based on the perceptions of individual respondents. As is the case in other studies of political influence and agreement, no independent data were available on the father's political position. This omission is not necessarily an important defect if perceptions are treated as significant elements in their own

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in effect, a residual category. The data to be reported in table 1 lend some justification to this interpretation; yet, recent research has suggested that the two orientations may not be as antithetical as initially anticipated (see, for example, Goldberg, Baker, and Rubenstein 1965).

[6] Responses to this item were moderately well correlated (gamma = +0.42) with an independent measure of liberalism-conservatism, thus indicating the utility of these alternatives as an index of student political opinion. The liberalism-conservatism scale contained the following items: (1) "government should be responsible for medical care for the aged"; (2) "all public utilities should be nationalized"; (3) "welfare programs stifle individual initiative"; (4) "a government that governs least governs best"; (5) "you can't legislate change; it must come from the people."

[7] In that a separate index of perceived agreement with mothers did not appreciably alter any of the reported findings, only the fathers' preferences are used and presented.

[8] Approximately 21 percent of the respondents were unable to provide adequate information on their own political preferences or those of their parents. Of these, forty-two cases involved the mother and were included in the analysis, thus bringing the number of usable respondents up to 82 percent of the total sample. The majority of the remainder of cases responded by stating "no preference" to the items on their father's or their own political beliefs; all cases involving "no preference" and other missing or inadequate information were eliminated from the analysis.

right, disposing individuals to maintain or modify their behavior in important ways. Furthermore, since our central concern is on the respondents' cognitions, their perceptions become critical. Two additional points are worth mentioning in regard to the perceptual basis of the dependent variable. First, the father's reported political party preference appeared to be reasonably distributed according to social status: 64.5 percent of those in the upper middle class estimated their fathers to be Republican, as compared to 52.4 percent in the lower middle class and 24.9 percent in the working class.[9] Second, there is no evidence to suggest that the father's reported political position is confounded with the independent variable: The distribution of fathers among the political alternatives previously listed was virtually identical for locals, intermediates, and cosmopolitans.

LOCAL-COSMOPOLITAN ORIENTATIONS: SOME CORRELATES

In line with previous research on locals and cosmopolitans, we would anticipate, if our operational definitions are valid, that locals should be more responsive than cosmopolitans to well-established primary group demands —even at the cost of negating particular desires or principles to which they adhere.

The data generally support this expectation. For example, in an attempt to gauge the pressures evolving from family ties and the adolescent society, respondents were asked whether they would join a particular club or organization highly attractive to them but unacceptable to their parents. Table 1 shows that nearly one-half of the locals state they would acquiesce to their parents' views as compared to about one-fifth of the cosmopolitans. An additional item illustrated a similar pattern of reliance. In answer to a hypothetical question on their anticipated reaction to disagreement with their spouses on politics (see table 1), 37 percent of the cosmopolitans stated they would attempt to change their spouses' views, whereas only 19 percent of the locals answered in this way.

These responses are in line with the conception that locals place greater priorities on personal relationships than on ideological principles. More direct evidence on this point, as it pertains to political commitments, is available by comparing locals and cosmopolitans in their responses to an item on the sacrifices they would make in defending their political beliefs. The following alternatives were listed: (a) "getting into a fight with a friend," (b) "giving up a good part of your leisure time," (c) "getting a good job," (d) "going to jail."[10] Responses were summed into a "political commitments" index and ranked into high, moderate, and low commitment groups. Table 1 shows that cosmopolitans are generally more inclined than locals to make sacrifices in defense of their political commitments—a

[9] The class position of the student's family of orientation was measured and delineated with reference to Hollingshead's (1957) Index of Social Position: middle class (classes I and II); lower middle class (class III); working class (classes IV and V).

[10] The specific item preceding these alternatives was worded as follows: "Certain political principles are so important that I would advocate them even at the cost of . . ."

pattern in keeping with their willingness to enter into conflict with parents and spouse.

While these data do not clarify why locals are hesitant to enter into interpersonal conflict or are hesitant to take risks in support of their political beliefs, there is some evidence pointing to a tradition of maintaining harmony on political beliefs in the local's family. Of those cases, for example, where beliefs were reported for both parents (see table 1), 47 percent of the cosmopolitans' parents disagreed in their political preferences compared to 30 percent of the locals' parents—thus minimally suggesting that cosmopolitans are less exposed to homogeneous political attitudes in their immediate nuclear family.[11]

TABLE 1

SOCIAL CORRELATES OF LOCAL-COSMOPOLITAN ORIENTATIONS

	COGNITIVE ORIENTATIONS (%)		
SOCIAL CORRELATES	Cosmopolitan (N=286)[a]	Intermediate (N=617)	Local (N=229)
A. Parents against joining organization:			
Definitely would join....................	31.8	20.6	15.4
Probably would join....................	45.9	46.2	37.3
Probably would not join................	22.3	33.2	47.4
B. Spouse holds contrary political views:			
Maintain views and attempt to change spouse...............................	37.0	30.2	18.8
Maintain views and avoid discussion.....	42.8	45.4	52.0
Modify beliefs to coincide with spouse....	20.3	24.4	29.3
C. Political commitments:			
High..................................	53.1	30.0	22.7
Moderate..............................	30.1	38.7	34.1
Low...................................	16.8	31.3	43.2
D. Father-mother political agreement:			
Parents agree.........................	53.5	63.2	70.3
Parents disagree......................	46.5	36.8	29.7

[a] N's may vary slightly from item to item due to missing information; in item D, however, the lack of information on the political preferences of mothers reduced the base to $N = 1,090$.

LOCAL-COSMOPOLITAN ORIENTATIONS AND POLITICAL CONFORMITY

The data presented are in line with the view that individuals with local orientations are less committed to self-determined principles and more dependent on primary group relations. It follows from this interpretation that locals should be more inclined than cosmopolitans to see themselves

[11] Previous research has suggested that when parents agree on the same political party, children are likely to be strong advocates of that position. Our own findings indicate, however, that differences in political conformity between locals and cosmopolitans are not altered by the extent to which their parents agree in their political views (see Campbell, Gurin, and Miller 1954; Nogee and Levin 1958).

in agreement with their fathers' political views. The data in table 2 are consistent with this hypothesis: approximately one-third of the cosmopolitans see themselves in agreement with their fathers' political position in comparison to almost one-half of the locals.[12] While the differences are not substantial, they further support the premise that *students with local orientations are more sensitive to primary group criteria in selecting their political positions.*

To further test the utility of this premise in accounting for perceived partisan agreement, the relationship between local-cosmopolitan orientations and agreement was reexamined under three conditions. These conditions have generally been used to account for disagreement from parental political views and are taken here to reflect (1) the status of the transmitter of political norms in the family, (2) the context in which the norm

TABLE 2

LOCAL-COSMOPOLITAN ORIENTATIONS BY
PERCEIVED POLITICAL AGREEMENT
WITH FATHER

Cognitive Orientations	Percentage of Agreement with Father
Cosmopolitan ($N = 286$).....	31.5
Intermediate ($N = 617$).....	39.9
Local ($N = 229$)............	48.5

was transmitted, and (3) the nature of the norm itself. Specifically, the conditions were: (1) social status and mobility, (2) the emotional climate of the family, and (3) the father's political beliefs. Each condition can be interpreted as affecting strain or harmony in the family.

There is reason to believe that the association between cognitive orientations and perceived agreement should occur only in the context of harmonious family relations. If students with local orientations are disposed to rely on primary group criteria for selecting their political views, they should see themselves as disagreeing with their fathers most frequently when relations are strained. Cosmopolitans are presumably less sensitive to primary group criteria; familial conditions should not, therefore, appreciably alter their frequency of agreement. From this view, we anticipate some specification of the original association between agreement and cognitive orientations—due, chiefly, to the reactiveness of students with local orientations to elements of harmony or strain in family relations.

[12] A more conservative definition of the dependent variable—perceived agreement with the father's *political party*—reveals the same pattern reported in table 2 but in more abbreviated form: 90 percent of the locals see themselves in agreement with their fathers' choice of party as compared to 86 percent of the intermediates and 77 percent of the locals.

SOCIAL STATUS AND MOBILITY

Previous research has suggested that occupational mobility is associated with social and psychological strain (Dynes, Clarke, and Dinitz 1956; Ellis and Lane 1967). This is understandable from the perspective of mobile blue-collar adolescents: blue-collar aspirants are confronted with problems of acceptance into the matrix of relations in middle-class society as well as connected problems of acculturation to a different class-based system of attitudes and beliefs. Recent research (Litwak 1960) has indicated that the problems attending mobility are not so disruptive as to completely attenuate parent-child relations; yet there is still reason to believe that mobility is associated with some form of opinion change, as evidenced by the finding that mobile working-class children are more likely to belong to the Republican party than the Democratic party typically selected by their

TABLE 3

PERCEIVED POLITICAL AGREEMENT WITH FATHER BY LOCAL-
COSMOPOLITAN ORIENTATIONS AND SOCIAL CLASS

COGNITIVE ORIENTATIONS	PERCENTAGE OF AGREEMENT WITH FATHER BY SOCIAL CLASS		
	Middle Class	Lower Middle Class	Working Class
Cosmopolitan........	38.5 (78)	23.4 (77)	33.6 (122)
Intermediate.........	41.6 (149)	37.9 (161)	39.9 (276)
Local...............	69.4 (36)	44.4 (72)	42.5 (106)

parents (Maccoby, Matthews, and Morton 1954; Havemann and West 1952, pp. 117–20; Berelson, Lazarsfeld, and McPhee 1966, pp. 90–91; Dodge and Uyeki 1962).

On the basis of their aspirations and education, virtually all the students from working and lower middle-class homes in our sample were upwardly mobile; hence, they provide a critical set of cases for examining the interplay among local-cosmopolitan orientations, perceived partisan agreement, and the strains introduced by mobility.

The data indicate that cosmopolitans are more likely than locals to disagree with their fathers regardless of their class origins. Yet, as illustrated in table 3, there is considerable variation in this tendency. Briefly, the relationship between orientations and perceived agreement occurs only in the middle and lower middle class but not in the working class, that is, among those with extreme mobility experience. Cosmopolitans or intermediates show no consistent relationship between perceived political agreement and the class position of their fathers. Among the locals, however, a relationship between agreement and class is apparent: approximately 70 percent of those students in the upper middle class identify themselves as agreeing with their fathers in comparison to some 43 percent in the working class. These findings suggest possible support for the interpretation that locals

are differentially reactive to the family strains introduced by mobility. It is conceivable, however, that the data may only reflect greater sensitivity among locals to the low social status of their fathers;[13] nonetheless, the findings conform to the general view that locals are more inclined than cosmopolitans to relate political decisions to various characteristics of their families.

EMOTIONAL CLIMATES

It is possible to move to a less inferential examination of the effects of strain by tapping the family's emotional climate, particularly the actual satisfactions derived from family experience. There is ample precedent for this approach. Students of mobility have repeatedly used estimates of family climates to explain extreme aspirations and pronounced disruptions

TABLE 4

PERCEIVED POLITICAL AGREEMENT WITH FATHER
BY LOCAL-COSMOPOLITAN ORIENTATIONS AND
HAPPINESS EXPERIENCED IN CHILDHOOD

COGNITIVE ORIENTATIONS	PERCENTAGE OF AGREEMENT WITH FATHER BY HAPPINESS EXPERIENCED IN CHILDHOOD	
	Happy Childhood	Unhappy Childhood
Cosmopolitan.......	33.8 (142)	30.0 (140)
Intermediate........	42.0 (343)	36.4 (261)
Local	56.6 (136)	35.6 (87)

of family continuity (Warner and Abegglen 1955; Dynes, Clarke, and Dinitz 1956). By linking unsatisfactory family experiences in childhood to adolescent political rebellion, Middleton and Putney (1963a) have introduced a similar approach to the analysis of political socialization.

To examine the effects of family experience, respondents were asked: "Taking all things together, how happy would you rate your childhood?" Answers to a seven-item checklist were dichotomized into a happy and unhappy group. Table 4 reports the relationship between local-cosmopolitan orientations and perceived agreement by these evaluations of childhood experience. The data illustrate that the association between local-cosmopolitan orientations and perceived agreement holds only among students who see their childhood as happy. Furthermore, the attenuation of the association between orientations and agreement among those with an unhappy childhood is due almost solely to the lesser conformity registered by the locals. This is again consonant with the view that locals are more reactive to

[13] Previous research has indicated that working-class fathers are less likely than middle-class fathers to be identified as exerting influence in the home (see Ellis and Lane 1963; Bowerman and Elder 1964).

primary group tension and strain. In that both the cosmopolitans and those intermediate on the scale are apparently unresponsive to reflections of happiness in childhood, it would be difficult to label their higher levels of disagreement as acts of rebellion. Rather, our data indicate that the rebellion hypothesis holds primarily for the locals.

Conceivably, analyzing the data by satisfactions experienced in childhood may not provide the most exacting test of rebellion and perceived disagreement among locals and cosmopolitans. As Lane (1959) has suggested, rebellion against politics is less relevant in homes where political issues lack salience; hence, the salience of politics in the family may be considered as a relevant condition focusing rebellious tendencies among adolescents. This interpretation has received support in Middleton and Putney's (1963a) analysis of political conformity between college students and their parents: in homes where politics was salient, the level of reported happiness was directly related to agreement with parents; where politics was not salient, happiness and agreement were unrelated.

Our data failed to replicate Middleton and Putney's results. Students from homes where politics was salient were more likely to agree with their parents than students from homes where politics was not salient (McClosky and Dahlgren 1959; Campbell et al. 1960). Further, when happiness and agreement were examined by salience, there was no interaction effect as anticipated on the basis of Middleton and Putney's findings: happiness does not differentially explain agreement in politically salient or nonsalient homes.

It is instructive to note that the high level of disagreement among locals experiencing an unhappy childhood is not appreciably altered by the degree of political salience in the home. Clearly, if disagreement among locals is to be interpreted as an act of political rebellion, then they should be most inclined to disagree when politics is deemed critical to the family's concerns. This is not the case, thus suggesting that while rebellion may still be a useful interpretation of disagreement among unhappy students with a local orientation, *political rebellion* is probably an inappropriate interpretation. It appears more likely that perceived disagreement among the unhappy locals is part of a general pattern of disaffection where politics is one of many points used to express rebellious inclinations.

POLITICAL PREFERENCES

The last condition examined was the effect of the father's political preferences on perceived conformity. Previous work in this area has generally revealed a uniform pattern: college students typically adopt a more liberal political position than their parents (Newcomb 1943; Edelstein 1962; Middleton and Putney 1963b) (for conflicting evidence see Nogee and Levin 1958; Dodge and Uyeki 1962; McClintock and Turner 1962). This has been interpreted as an aspect of the generational transition from more to less traditional postures. In our sample, the trend toward political liberality was pronounced: 68 percent of those who disagreed with their

fathers selected a more liberal preference.[14] Furthermore, the best predictor of agreement in the study was the father's political position: 26 percent ($N = 266$) agreed with fathers identified as conservative, 37 percent ($N = 582$) agreed with fathers identified as middle of the road, and 59 percent ($N = 239$) with fathers identified as liberal.

Given this strong drift to liberal positions, it would appear reasonable, following Newcomb (1943), to assume the development of cross pressures on students from politically conservative homes. These students are confronted, on the one hand, with demands evolving from a liberal college culture and, on the other hand, with demands evolving from a politically conservative family tradition (cf. Levin 1961 and Langston 1967 for more exacting work regarding the effects of social climates on political beliefs). Davis (1940) has suggested that such cross pressures introduce conflict into parent-child relations. Similarly, Geiger (1960) has observed strains in

TABLE 5

PERCEIVED POLITICAL AGREEMENT WITH FATHER BY
LOCAL-COSMOPOLITAN ORIENTATIONS AND
FATHER'S POLITICAL POSTURE

COGNITIVE ORIENTATIONS	PERCENTAGE OF AGREEMENT WITH FATHER BY FATHER'S POLITICAL POSTURE		
	Conservative	Middle of the Road	Liberal
Cosmopolitan........	18.3 (60)	26.1 (138)	52.7 (74)
Intermediate.........	24.0 (146)	40.7 (322)	58.8 (114)
Local...............	36.7 (60)	46.7 (107)	68.6 (51)

family relations resulting from the discrepant political attitudes of parents and adolescents. If strain were an outcome of discrepant political views, locals from conservative homes should be (1) more sensitive than cosmopolitans from conservative homes to the strain emerging from the cross pressures between their family's beliefs and the dominant trends at the university, and, consequently, (2) more inclined to react with higher levels of disagreement. The data on responses among locals to spousal pressures suggest that their political stance is sufficiently flexible for such reactions; the data on social class suggest that their reactions may indeed derive from discrepancies between their home and the university milieu.

Our findings do show that locals from conservative homes more frequently disagree with their father's politics than locals from liberal homes, thus suggesting that students with local orientations indeed succumb to the dominant liberal trends on campus. Yet, the data in table 5 indicate that local students are generally less reactive than cosmopolitan students; in

[14] In that the item on the father's and child's political beliefs included an open-ended alternative, it was not always possible to code preferences as either liberal or conservative.

fact, cosmopolitans more frequently disagree regardless of their fathers' political views.

Further analysis of these data shows no clear explanation as to why locals and cosmopolitans see themselves in disagreement with fathers of varying political commitments. Somewhat more revealing, however, are the reasons why locals and cosmopolitans conform to paternal views. If party preferences are correlated with a separate index of conservative-liberal ideology,[15] it appears that cosmopolitans more frequently than locals have a political party position consistent with their ideological position: The correlation (gamma) between political party position and ideological position is +0.62 for the cosmopolitans, +0.44 for the intermediate group, and +0.32 for the locals. Apparently, locals see themselves in agreement with their fathers even at the cost of some inconsistency with their own ideological positions; alternatively, when a cosmopolitan conforms his ideological position is likely to be more closely aligned with the political posture of his father. While the data do not indicate whether the cosmopolitan's ideological views are formed before or after the choice to politically agree with his father, the finding is at least consistent with the general conception of the cosmopolitan's more frequent reliance on abstract principles than on interpersonal pressures.

SUMMARY AND DISCUSSION

In summary, the findings seriously question whether perceived partisan agreement between parent and child can *uniformly* be understood as an issue of loyalty or disloyalty to familial traditions. Our perspective throughout has been that it may be erroneous to treat all individuals as equally dependent on family relations and equally committed to their traditions. The data presented suggest that students with local orientations place great stress on primary group relations in arriving at a particular political position: they see themselves as agreeing with their fathers when family relations appear harmonious and disagreeing when family relations appear strained. Yet, cosmopolitans do not seem to behave in a similar manner; their political positions would appear to be more a function of self-determined general principles than a response to highly particularistic group demands.

It is not our intent to depict cosmopolitans as completely independent or autonomous individuals, unresponsive to demands of any kind. The data only indicate that they are less likely to follow traditional family demands. Future research, hopefully, will document alternative agencies of socialization and control as well as possible groups of reference, which bind cosmopolitans to particular political decisions.

More generally, the data also suggest that some of the recent literature on political agreement in the family has tended to overemphasize rebellion —whether fostered by mobility or emotional dissatisfaction—in explaining

[15] See n. 6 for the particular items included in the index of conservative-liberal ideology.

why people depart from the political convictions of their parents. We have seen, for example, that the rebellion hypothesis is probably inappropriate as an explanation of the cosmopolitan's political posture. The limitation of the rebellion perspective is not only in its view of change as unnatural—hence the strong connotation of the term rebellion—but also in its tendency to slight the possibility of parents aiding in the development of values which foster deviation in their children. This possibility, as suggested in table 1, is illustrated by the tendency for cosmopolitans to come from homes where parents themselves disagree on politics. It is as difficult to discuss deviation or rebellion in such a familial environment as it is to discuss deviation in any normatively heterogeneous situation. It is conceivable, in fact, that political deviation may be permitted or even encouraged in some homes.

We have yet to identify the antecedents of local and cosmopolitan orientations. They probably lie in particular family conditions. Whatever the source, however, the data indicate that adherence to certain orientations regarding what is important and proper in social life has a notable effect on an individual's tendency to see himself in agreement with the political opinions of his father.

REFERENCES

Ball, Donald W. 1964. "Covert Political Rebellion as *Ressentiment.*" *Social Forces* 43 (October):93–101.
Berelson, Bernard, Paul Lazarsfeld, and William McPhee. 1966. *Voting. A Study of Opinion Formation in a Presidential Campaign.* Chicago: University of Chicago Press.
Blau, Peter M., and W. Richard Scott. 1962. *Formal Organizations.* San Francisco: Chandler.
Bowerman, Charles E., and Glen Elder. 1964. "Variations in Adolescent Perception of Family Power Structure." *American Sociological Review* 29(August):551–67.
Campbell, Angus, Gerald Gurin, and Warren Miller. 1954. *The Voter Decides.* Evanston, Ill.: Row, Peterson.
Campbell, Angus, et al. 1960. *The American Voter.* New York: Wiley.
Davis, Kingsley. 1940. "The Sociology of Parent-Youth Conflict." *American Sociological Review* 5(August):523–35.
Dodge, Richard, and Eugene Uyeki. 1962. "Political Affiliation and Imagery Across Two Related Generations." *Midwest Journal of Political Science* 6(August):266–76.
Dynes, Russell, Alfred Clarke, and Simon Dinitz. 1956. "Levels of Occupational Aspirations: Some Aspects of Family Experience as a Variable." *American Sociological Review* 21(April):212–15.
Edelstein, Alex. 1962. "Since Bennington: Evidence of Change in Student Political Behavior." *Public Opinion Quarterly* 26(Winter):564–77.
Ellis, Robert A., and W. Clayton Lane. 1963. "Structural Supports for Upward Mobility." *American Sociological Review* 28(October):743–56.
———. 1967. "Social Mobility and Social Isolation: A Test of Sorokin's Dissociation Hypothesis." *American Sociological Review* 32(April):237–53.
Geiger, Kent. 1960. "Changing Political Attitudes in Totalitarian Society: A Case Study of the Role of the Family." In *A Modern Introduction to the Family,* edited by Norman Bell and Ezra Vogel. Glencoe, Ill.: Free Press.
Goldberg, Louis, Frank Baker, and Albert T. Rubenstein. 1965. "Local-Cosmopolitan: Unidimensional or Multidimensional?" *American Journal of Sociology* 70(May):704–10.
Goode, William J. 1960. "A Theory of Role Strain." *American Sociological Review* 25(August):483–96.

Gouldner, Alvin. 1957. "Cosmopolitans and Locals: Toward an Analysis of Latent Social Roles—I." *Administrative Science Quarterly* 2(December):281–306.

———. 1958. "Cosmopolitans and Locals: Toward an Analysis of Latent Social Roles—II." *Administrative Science Quarterly* 2(March):444–80.

———. 1959. "Reciprocity and Autonomy in Functional Theory." In *Symposium on Sociological Theory*, edited by Llewellyn Gross. Evanston, Ill.: Row, Peterson.

Havemann, Ernest, and Patricia West. 1952. *They Went to College*. New York: Harcourt, Brace & Co.

Hollingshead, A. B. 1957. *Two Factor Index of Social Position*. New Haven, Conn.: Privately published.

Hyman, Herbert. 1959. *Political Socialization*. Glencoe, Ill.: Free Press.

Lane, Robert E. 1959. "Fathers and Sons: Foundations of Political Beliefs." *American Sociological Review* 24(August):502–11.

Langston, Kenneth. 1967. "Peer Group and School and the Political Socialization Process." *American Political Science Review* 61(September):751–58.

Lasswell, Harold. 1930. *Psychopathology and Politics*. Chicago: University of Chicago Press.

Levin, Martin. 1961. "Social Climates and Political Socialization." *Public Opinion Quarterly* 25(Winter):596–606.

Litwak, Eugene. 1960. "Occupational Mobility and Family Cohesion." *American Sociological Review* 25(February):9–21.

McClintock, Charles G., and Henry A. Turner. 1962. "The Impact of College Upon Political Knowledge, Participation and Values." *Human Relations* 15(May):163–76.

McClosky, Herbert, and Harold Dahlgren. 1959. "Primary Group Influence on Party Loyalty." *American Political Science Review* 53(September):757–76.

Maccoby, Eleanor E., Richard E. Matthews and Anton Morton. 1954. "Youth and Political Change." *Public Opinion Quarterly* 18(Spring):23–29.

Merton, Robert K. 1959. *Social Theory and Social Structure*. Glencoe, Ill.: Free Press.

Middleton, Russell, and Snell Putney. 1963a. "Political Expression of Adolescent Rebellion." *American Journal of Sociology* 68(March):527–35.

———. 1963b. "Student Rebellion Against Parental Political Beliefs." *Social Forces* 41(May):377–83.

Newcomb, Theodore M. 1943. *Personality and Social Change*. New York: Dryden.

Nogee, Philip, and Murray Levin. 1958. "Some Determinants of Political Attitudes Among College Voters." *Public Opinion Quarterly* 22(Winter):449–63.

Stinchcombe, Arthur L. 1968. "Political Socialization in the South American Middle Class." *Harvard Educational Review* 38(Summer):506–27.

Strodtbeck, Fred. 1958. "Family Interaction, Values and Achievement." In *Talent and Society*, edited by David C. McClelland et al. New York: Van Nostrand.

Thielbar, Gerald. 1966. "Localism-Cosmopolitanism: Social Differentiation in Mass Society." Ph.D. dissertation, University of Minnesota.

Warner, W. Lloyd, and James C. Abegglen. 1955. *Big Business Leaders in America*. New York: Harper.

Making Men Modern: On the Causes and Consequences of Individual Change in Six Developing Countries[1]

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The Project on the Social and Cultural Aspects of Economic Development at Harvard's Center for International Affairs interviewed 6,000 men from six developing countries to study the impact on the individual of his exposure to and participation in the process of national and economic modernization. To a striking degree, the same syndrome of attitudes, values, and ways of acting—such as openness to new experience, independence from parental authority, and taking an active part in civic affairs—defines the modern man in each of the six countries and in all the occupational groups of cultivator, craftsman, and industrial worker. Education is the most powerful factor in making men modern, but occupational experience in large-scale organizations, and especially in factory work, makes a significant contribution in "schooling" men in modern attitudes and in teaching them to act like modern men. Those who come from very traditional backgrounds and receive little formal schooling can, under the right circumstances, still become modern in adult life. Modern men in developing countries not only have modern attitudes, but they can be shown to behave differently. Despite popular impressions to the contrary, exposure to the influence of migration and modern institutions does not lead to psychic distress.

Since 1962 a group of my colleagues and I at Harvard University have been working to understand the impact on the individual of his participation in the process of modernization. In the pursuit of this goal we devised a com-

plex and comprehensive questionnaire touching on a wide variety of life situations and intended to measure a substantial segment of the range of attitudes, values, and behaviors we conceive as particularly relevant to understanding the individual's participation in the roles typical for a modern industrial society.[2] This questionnaire we then administered to some 6,000 young men in six developing countries: Argentina, Chile, India, Israel, Nigeria, and East Pakistan. All three of the continents containing the overwhelming majority of developing nations are represented. The sampled countries cover the range from the newest nations which have only recently won their independence to those with a long history of self-governance; from those only now emerging from tribal life to those with ancient high cultures, and from those furthest removed from, to those most intimately linked to, the European cultural and industrial social order. The men interviewed were selected to represent points on a presumed continuum of exposure to mo ernizing influences, the main groups being the cultivator of the land still rooted in his traditional rural community; the migrant from the countryside just arrived in the city but not yet integrated into urban industrial life; the urban but nonindustrial worker still pursuing a more or less traditional occupation, such as barber or carpenter, but now doing so in the urban environment even though outside the context of a modern large-scale organization; and the experienced industrial worker engaged in production using inanimate power and machinery within the context of a more or less modern productive enterprise. To these we have added sets of secondary school and university students who enjoy the presumed benefits of advanced education. Within and across these sample groups we exercised numerous controls in the selection of subjects and in the analysis of our data, both to understand the influence and to prevent the uncontrolled effects of sociocultural and biosocial factors such as age, sex, education, social origins, ethnic membership, past life experience, and the like.

Our interview included almost 300 entries. Some 160 of these elicited attitudes, values, opinions, and reports on the behavior of others and oneself, touching on almost every major aspect of daily life. The questionnaire included various tests of verbal ability, literacy, political information, intelligence, and psychic adjustment. In some cases it took four hours of interviewing to complete—a demanding experience for both interviewer and interviewee.

We completed our field work near the end of 1964, and since that time have been engaged in processing and then later analyzing the very substantial body of data we collected. At this time our analysis is sufficiently far advanced so that we can discern the main outlines of some of the conclusions we must draw. To present these within the rigorous limits of the time and space currently allotted for scholarly communications requires

[2] Some sixty-eight of the questions are listed, in abbreviated form, in table 1 of Smith and Inkeles 1966. A complete copy of the questionnaire may be obtained by ordering Document 9133 from the Chief, Auxiliary Publication Project, Photoduplication Service, Library of Congress, Washington, D.C. remitting $13.50 for microfilm or $117.50 for photocopies.

imposing a telegraphic style and forgoing the presentation of detailed evidence to support my arguments. Each of my conclusions will address itself to one of the main issues to which our research was directed. Each issue is presented in the form of a question to which I will assay an answer. The four main issues dealt with here should not be understood as being the only ones to which we addressed ourselves; neither should it be assumed that our data provide answers only to these questions.

1. *How far is there an empirically identifiable modern man, and what are his outstanding characteristics?*—Many social scientists have a conception of the modern man, but few have submitted this conception to an empirical test to ascertain whether this type really exists in nature and to determine how often he appears on the scene. Important exceptions may be found in the work of Kahl (1968), Dawson (1967), and Doob (1967). We too have our model of the modern man, a complex one including three components which we refer to as the analytic, the topical, and the behavioral models, all of which, we assumed, might well tap one general underlying common dimension of individual modernity.[3]

We believe our evidence (presented in some detail in Smith and Inkeles 1966) shows unmistakably that there is a set of personal qualities which reliably cohere as a syndrome and which identify a type of man who may validly be described as fitting a reasonable theoretical conception of the modern man. Central to this syndrome are: (1) openness to new experience, both with people and with new ways of doing things such as attempting to control births; (2) the assertion of increasing independence from the authority of traditional figures like parents and priests and a shift of allegiance to leaders of government, public affairs, trade unions, cooperatives, and the like; (3) belief in the efficacy of science and medicine, and a general abandonment of passivity and fatalism in the face of life's difficulties; and (4) ambition for oneself and one's children to achieve high occupational and educational goals. Men who manifest these characteristics (5) like people to be on time and show an interest in carefully planning their affairs in advance. It is also part of this syndrome to (6) show strong interest and take an active part in civic and community affairs and local politics; and (7) to strive energetically to keep up with the news, and within this effort to prefer news of national and international import over items dealing with sports, religion, or purely local affairs.

This syndrome of modernity coheres empirically to meet the generally accepted standards for scale construction with reliabilities ranging from .754 to .873 in the six countries.[4] Looking at the range of items which enters into the scale, one can see that it has a compelling face validity. In addition, the empirical outcome accords well with our original theoretical model and, indeed, with those of numerous other students of the problem.

[3] This model has been sketched in a preliminary way in Inkeles 1966. A fuller account is presented in Inkeles, forthcoming in Faunce and Garfinkel.

[4] Reference is to the reliabilities of the long form of the scale (OM-2) containing 159 items. Reliabilities for some of the various short forms were sometimes lower but were generally in the same range. See Smith and Inkeles 1966, p. 367.

Evidently the modern man is not just a construct in the mind of sociological theorists. He exists and he can be identified with fair reliability within any population which can take our test.[5]

To discover that there are indeed men in the world who fit our model of a modern man is comforting, but perhaps not startling. After all, we can probably somewhere find an example of almost any kind of man one might care to delineate. It is important to emphasize, therefore, that men manifesting the syndrome of attitudes, values, and ways of acting we have designated "modern" are not freaks. They are not even rare. On the contrary, there are very substantial numbers of them in all six of the countries we have studied.[6]

Furthermore, we consider it to be of the utmost significance that the qualities which serve empirically to define a modern man do not differ substantially from occupation to occupation, or more critically, from culture to culture. In constructing our standard scales of modernity we utilized a pool of 119 attitude items.[7] In each country these items were then ranked according to the size of the item-to-scale correlation, and the subset of items having the highest correlations was then selected as defining the modern man for the given country. Using this "coherence" method to construct the national modernity scales, we might have found a totally different set of items defining the syndrome of modernity in each of our six national samples. Indeed, if we used only the twenty items ranking highest in the item-to-scale correlations for each country, we could theoretically have

[5] On the basis of our experience with the longer versions of the questionnaire, we have been able to devise several short forms which permit rapid identification of the more modern and more traditional men in any population. Details on the construction and content of these short forms are given in Smith and Inkeles 1966. One of these short forms (OM-12) which has proved a highly reliable instrument is currently being used in more than twenty pure- and applied-research programs in over a dozen developing countries.

[6] Of course, when you use a scale score to designate a "type" of man, the number of men who fit your typology depends entirely on your decision as to a cutting point on both the items and on the scale as a whole. For example, in one form of our modernity scale (IM-6) a representative subset of thirty-three items is scored so that only by affirming the most decidedly modern position at the end of the theoretical continuum of alternative answers does a man get a point toward his modernity score. On this strict test, getting as many as half the answers "right" would qualify 37 percent of our Nigerian sample as "modern." If we set a higher standard, and reserve the term modern for men who get two-thirds or more of the answers "right," then only 6 percent qualify. Raising the standard still higher to require that a man get three-fourths or more of the answers "correct"reduces the pool of modern men to 2 percent of the sample. The comparable proportions qualifying as modern by this standard in our Pakistani sample are much lower, being 14 percent, 2 percent, and 0 percent, respectively. Changing the scoring standard for the individual questions would, obviously, also affect the proportions classified as modern.

[7] These included *all* questions which in our opinion measured attitudes and could be unambiguously scored as having a "modern" and a "traditional" answer. Queries which did not meet these criteria were excluded from consideration. This meant mainly background questions, information-testing items, behavioral measures, adjustment measures, and the like. For details see Smith and Inkeles 1966.

come out with six totally different syndromes, one for each country, no one overlapping in the least with any other. The actual outcome of the analysis was totally different. The probability that even one item would come out in the top fifty in all six countries is approximately five in a thousand. We actually had ten items which were in the top fifty in all six countries, sixteen more in the top fifty in five countries, thirteen more which were in this set in four of the six countries. The probability that the same thirty-nine items would by chance be in the top fifty in four of the six countries is so infinitesimal as to make our results notable indeed.

This means that what defines man as modern in one country also defines him as modern in another. It argues for the actual psychic unity of mankind in a structural sense and the potential psychic unity of mankind in the factual sense. In speaking of the unity of mankind in terms of psychic structure, I mean that the nature of the human personality, its inner "rules" of organization, is evidently basically similar everywhere. That is, the association of the elements or components of personality do not—and I think in substantial degree *cannot*—vary randomly or even relatively freely. There is evidently a system of inner, or what might be called structural, constraints in the organization of the human personality which increase the probability that those individuals—whatever their culture—who have certain personality traits will also more likely have others which "go with" some particular basic personality system. So far as the future is concerned, moreover, I believe that this structural unity provides the essential basis for greater factual psychic unity of mankind. Such a factual unity, not merely of structure but of *content*, can be attained insofar as the forces which tend to shape men in syndromes such as that defining the modern man become more widely and uniformly diffused throughout the world. This point requires that we consider the second issue to which our research addressed itself.

2. *What are the influences which make a man modern? Can any significant changes be brought about in men who are already past the formative early years and have already reached adulthood as relatively traditional men?*—Education has often been identified as perhaps the most important of the influences moving men away from traditionalism toward modernity in developing countries. Our evidence does not challenge this well-established conclusion. Both in zero-order correlations[8] and in the more complex multivariate regression analysis, the amount of formal schooling a man has had emerges as the single most powerful variable in determining his score on our measures. On the average, for every additional year a man spent in school he gains somewhere between two and three additional points on a scale of modernity scored from zero to 100.

Our modernity test is not mainly a test of what is usually learned in school, such as geography or arithmetic, but is rather a test of attitudes

[8] The correlation (Pearsonian) between education and the overall measure of modernization ranges from 0.34 in Pakistan to 0.65 in India. The size of these coefficients is substantially affected by the educational "spread" in each sample. That spread is largest in India, with the cases rather evenly distributed from zero to thirteen years of education.

and values touching on basic aspects of a man's orientation to nature, to time, to fate, to politics, to women, and to God. If attending school brings about such substantial changes in these fundamental personal orientations, the school must be teaching a good deal more than is apparent in its syllabus on reading, writing, arithmetic, and even geography. The school is evidently also an important training ground for inculcating values. It teaches ways of orienting oneself toward others, and of conducting oneself, which could have important bearing on the performance of one's adult roles in the structure of modern society. These effects of the school, I believe, reside not mainly in its formal, explicit, self-conscious pedagogic activity, but rather are inherent in the school as an *organization*. The modernizing effects follow not from the school's curriculum, but rather from its informal, implicit, and often unconscious program for dealing with its young charges.[9] The properties of the rational organization as a hidden pursuader—or, as I prefer to put it, as a silent and unobserved teacher— become most apparent when we consider the role of occupational experience in shaping the modern man.

We selected work in factories as the special focus of our attention in seeking to assess the effects of occupational experience in reshaping individuals according to the model of the modern man. Just as we view the school as communicating lessons beyond reading and arithmetic, so we thought of the factory as training men in more than the minimal lessons of technology and the skills necessary to industrial production. We conceived of the factory as an organization serving as a general school in attitudes, values, and ways of behaving which are more adaptive for life in a modern society. We reasoned that work in a factory should increase a man's sense of efficacy, make him less fearful of innovation, and impress on him the value of education as a general qualification for competence and advancement. Furthermore, we assumed that in subtle ways work in a factory might even deepen a man's mastery of arithmetic and broaden his knowledge of geography without the benefit of the formal lessons usually presented in the classroom. Indeed, the slogan for our project became, "The factory can be a school—a school for modernization."

Although our most sanguine hopes for the educational effects of the factory were not wholly fulfilled, the nature of a man's occupational experience does emerge as one of the strongest of the many types of variables we tested and is a quite respectable competitor to education in explaining a person's modernity. The correlation between time spent in factories and individual modernization scores is generally about 0.20.[10] With the effects

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[9] In much of the current discussion of the effectiveness and ineffectiveness of our schools, this aspect of the school's impact has been generally neglected. For an important exception see Dreeben 1968.

[10] However, in India it was only 0.08. We believe this to be not a condition peculiar to India, but to our industrial sample there. Everywhere else we sampled from fifty to more than 100 factories, including all types and sizes of industry, but in India our sample was limited to eleven factories, mostly large, and two of these were not truly industrial; they processed minerals.

of education controlled, the factory workers generally score eight to ten points higher on the modernization scale than do the cultivators.[11] There is little reason to interpret this difference as due to selection effects since separate controls show that new workers are not self- or preselected from the village on grounds of already being "modern" in personality or attitude. Nevertheless, we can apply a really stringent test by making our comparisons exclusively within the industrial labor force, pitting men with few years, of industrial experience against those with many, for example, five or more. When this is done, factory experience continues to show a substantial impact on individual modernization, the gain generally being about one point per year on the overall measure of modernization (OM).

It is notable that even when we restrict ourselves to tests of verbal fluency and to tests of geographical and political information, the more experienced workers show comparable advantages over the less experienced. To choose but one of many available examples, in Chile among men of rural origin and low education (one to five years)—and therefore suffering a double disadvantage in background—the proportion who could correctly locate Moscow as being the Soviet Russian capital rose from a mere 8 percent among the newly recruited industrial workers to 39 percent among those with middle experience and to 52 percent among the men who had eight years or more in the factory. Even among those with the double advantage of higher education (six to seven years) and urban origins, the proportion correctly identifying Moscow decidedly rose along with increasing industrial experience, the percentages being 68, 81, and 92 for the three levels of industrial experience, respectively. Summary evidence from all six countries is presented in table 1. It should be clear from these data that the factory is serving as a school even in those subjects generally considered the exclusive preserve of the classroom.[12]

To cite these modernizing effects of the factory is not to minimize the greater absolute impact of schooling. Using a gross occupational categorization which pits cultivators against industrial workers, we find that the classroom still leads the workshop as a school of modernization in the ratio of 3:2. Using the stricter test which utilizes factory workers only, grouped by length of industrial experience, it turns out that every additional year in

[11] Keep in mind that the test has a theoretical range from zero to 100, and an observed range in our samples almost as great. With samples of our size, differences so large are significant at well above the .01 level. This test of significance and many of the other statistics presented in this report require that one meet certain conditions, such as random sampling, which our data do not meet. Nevertheless, we present such statistics in order to provide a rough guide or standard of judgment, in the belief that to do so is preferable to leaving the reader without any criterion by which to evaluate one figure as against another. The reader must be cautioned, however, not to interpret any single statistic too literally. Conclusions should be drawn not from single figures but from the whole array of evidence across the six countries.

[12] It will be noted that the pattern manifested in the other five countries is not shown in Israel. There the new workers are as well informed as the experienced. We attribute this not so much to the qualities of Israeli industry as to the nature of Israeli society. In that small, mobile, and urbanized environment, information tends to be rapidly and more or less evenly diffused throughout the nation and to all classes.

TABLE 1

PERCENTAGE OF INDUSTRIAL WORKERS AMONG LOW[a] EDUCATED GIVING CORRECT ANSWERS ON INFORMATION TESTS
(BY COUNTRY AND MONTHS OF FACTORY EXPERIENCE)

| | COUNTRY AND AVERAGE MONTHS EXPERIENCE | | | | | | | | | | | |
| QUESTION | Argentina | | Chile | | India | | Israel | | Nigeria | | East Pakistan | |
	3	90	2	96	2	72	3	84	3	48	1	48
Identify electrical apparatus[b]	37	63*	33	62***	44	76***	80	88	91	91	50	70**
Identify movie camera	60	69*	6	8	29	51**	84	88	68	70	9	37***
Cite 3 or more city problems	5	18	15	32***	0	1	24	25	30	22	52	52*
Identify international leader[c]	26	67**	47	85***	1	31***	80	81	11	17	2	26**
Identify local leader	33	51	27	81***	15	52***	67	92	70	78	52	79*
Identify Moscow	36	60*	17	67***	1	16***	86	86	11	17	2	2
Name 3 or more newspapers[d]	12	21	81	92	6	28**	75	61	81	91	20	44**
Approximate N cases	40	70	90	130	75	130	25	100	60	25	65	120

* t-test score significant at the .05 level.
** Significance at the .01 level.
*** Significance at the .001 level or better.

a Data for high education groups on these seven questions in each country provide an additional 42 tests of which 33 were in accord with the conclusion that men with more factory experience score higher on information tests, 7 were inconclusive, and 2 contradictory.

b In Pakistan, India, and Nigeria a picture of a radio was shown; in Argentina, Chile, and Israel, a picture of a tape recorder was used instead.

c Respondents were asked to identify Lyndon Johnson in Chile, Argentina, and Israel; John F. Kennedy in Pakistan and India; Charles de Gaulle in Nigeria.

d In Argentina, "name books" was substituted for "name newspapers."

school produces three times as much increment in one's modernization score as does a year in the factory, that is, the ratio goes to 3:1. The school seems clearly to be the more efficient training ground for individual modernization. Nevertheless, we should keep in mind that the school has the pupil full time, and it produces no incidental by-products other than its pupils. By contrast, the main business of the factory is to manufacture goods, and the changes it brings about in men—not insubstantial, as we have seen—are produced at virtually zero marginal cost. These personality changes in men are therefore a kind of windfall profit to a society undergoing the modernization process. Indeed, on this basis we may quite legitimately reverse the thrust of the argument, no longer asking why the school does so much better than the factory, but rather demanding to know why the school, with its full time control over the pupil's formal learning, does not perform a lot *better* than it does relative to the factory.

TABLE 2

VARIANCE IN SCORES OF INDIVIDUAL MODERNIZATION (OM-3) ACCOUNTED
FOR BY EARLY AND LATE SOCIALIZATION INFLUENCES
IN SIX DEVELOPING COUNTRIES
(%)

Variable	Argentina	Chile	India	Israel	Nigeria	Pakistan
Early Socialization.....	28.8	26.0	52.4	22.1	23.0	22.2
Late Socialization......	31.6	34.4	31.4	22.4	28.2	28.3

Our experience with the factory enables us to answer the secondary question posed for this section. Since men generally enter the factory as more or less matured adults, the effects observed to follow upon work in it clearly are late socialization effects. Our results indicate that substantial changes can be made in a man's personality or character, at least in the sense of attitudes, values, and basic orientations, long after what are usually considered the most important formative years. The experience of factory work is, of course, not the only form which this late socialization takes. It may come in the form of travel or migration, by exposure to the media of mass communication, or through later life in the city for men who grew up in the countryside.[13] We therefore combined our explanatory variables into two main sets, one representing *early* socialization experience—as in formal schooling—and the other reflecting *late* socialization experiences—as in one's adult occupation. We may observe (from table 2) that the late socialization experiences stake out a very respectable place for themselves in the competition to account for the observed variance in individual

[13] The distinctive effectiveness of each of these potentially modernizing experiences, and others, will be assessed in the general report of our project in preparation under the authorship of Alex Inkeles and David H. Smith, to be titled *Becoming Modern.*

modernization scores.[14] In five countries the set of late socialization variables explained as much or more of the variance in modernization scores as did the combined early socialization variables, each set explaining between one-fourth and one-third of the variance.

In India the early socialization variables were decidedly more powerful—accounting for 52 percent as against 31 percent of the variance explained by the late socialization variables. But in absolute terms, the late experiences are still doing very well.[15] All in all, we take this to be impressive evidence for the possibility of bringing about substantial and extensive changes in the postadolescent personality as a result of socialization in adult roles.

3. *Are there any behavioral consequences arising from the attitudinal modernization of the individual? Do modern men act differently from the traditional man?*—Many people who hear of our research into individual modernization respond to it by acknowledging that we may have discovered what modern man *says*, but they are more interested in knowing what he *does*. This view overlooks the fact that taking a stand on a value question is also an action, and one which is often a very significant one for the respondent.[16] Our critics' comment also tends implicitly to underestimate the importance of a climate of expressed opinion as an influence on the action of others. And it probably assumes too arbitrarily that men use speech mainly to mislead rather than to express their true intentions. Nevertheless, the question

[14] In this regression analysis we utilized as the dependent variable a long form of the modernity scale OM-3, not as described in Smith and Inkeles 1966. Using seven principal predictor variables selected on theoretical and empirical grounds, we obtained multiple correlation coefficients of from about .57 to .76 in our six countries. We could thus account for between 32.5 percent and 59.0 percent of variance in the modernity scale scores. We then grouped the predictor variables in two sets. The set of early socialization variables included ethnicity, father's education, and own formal education. Late socialization variables included occupational type, consumer goods possessed (as a measure of standard of living), a measure of mass media exposure, and age. Each set was then used alone to ascertain what portion of the variance it could explain, as indicated in table 2. A discussion of the rationale for selecting these particular variables and grouping them so, as well as details of the linear multiple regression analysis, will be presented in a later publication by David H. Smith and Alex Inkeles.

[15] An alternative approach to estimating the relative contribution of the two sets of variables is to consider the decrement in the total variance explained when either set is withdrawn from the total pool of predictors. When this was done, the late socialization variables again emerged as more powerful everywhere except in India. The following set of figures presents, first, the decrement in the total variance explained resulting from withdrawal of the early socialization variables, and second, the decrement resulting from withdrawal of the late socialization variables from the total predictor pool: Argentina .127/.155; Chile .100/.184; India .276/.066; Israel .101/.104; Nigeria .068/.120; East Pakistan .070/.131. The fact that these decrements are so much smaller than the proportion of variance explained by each set alone indicates that to some extent the sets overlap, and when one set is dropped the other "takes over" for it in explaining some part of the variance.

[16] For example, it is an act of substantial civic courage for a young man in a traditional village to tell our interviewer he would be more inclined to follow the local coop leader than the village elders, or that he considers himself more a Nigerian than an Ife, or whatever is the local tribal basis of solidarity.

is a legitimate one, and we addressed ourselves to it in our research. Although this part of our analysis is least advanced, we can offer some tentative conclusions on the basis of preliminary analysis.

We have the definite impression that the men we delineate as modern not only *talk* differently, they *act* differently. To explore this relationship we constructed a scale of modernization based exclusively on attitudinal questions, rigorously excluding those dealing with action rather than belief or feeling.[17] This measure of attitudinal modernity we then related to the behavioral measures in our survey. In all six countries we found action intimately related to attitude. At any given educational level, the man who was rated as modern on the attitudinal measure was also more likely to have joined voluntary organizations, to receive news from newspapers every day, to have talked to or written to an official about some public issue, and to have discussed politics with his wife. In many cases the proportion who claimed to have taken those actions was twice and even three times greater among those at the top as compared with those at the bottom of the scale of attitudinal modernity. Table 3 presents the relevant evidence. We should note, furthermore, that the items included in table 3 are illustrative of a larger group of about thirty individual questions and a dozen scales selected on theoretical grounds as appropriate tests of the relation between expressed attitudes and reported behavior. The items used for illustration were not arbitrarily selected as the only ones supporting our assumptions.[18]

The particular behaviors we cited above are all "self-reported." The question inevitably arises as to whether then we are not merely testing attitudinal consistency—or merely consistency in response—rather than any

[17] In the project identification system this scale is designated OM-1. It includes only seventy-nine items selected from the larger pool by a panel of expert judges on the grounds that (a) they dealt only with attitudes, not information, political orientation, or action, and (b) they clearly were appropriate to test the original theoretical conception of modernity as more or less "officially" defined by the project staff.

[18] This assertion is supported by consideration of the relevant gamma statistics on the relationship of attitudinal modernity (OM scores) and information tests. For this purpose low- and high-education groups were tested separately (except in Pakistan), hence the number of gamma statistics obtained is twice the number of items used. The average gamma statistics shown below are based on three-part tables which included middle as well as low and high OM. Separate results are given for items and for scales, since the scales show the combined effects of groups of items and hence are not truly "independent" additional tests of the hypothesis under scrutiny.

	COUNTRY					
TESTS	Argentina	Chile	India	Israel	Nigeria	Pakistan
Based on items:						
Average gamma.......	201	232	342	244	205	303
Number of tests.......	60	62	58	52	46	29
Based on scales:						
Average gamma.......	305	296	449	313	276	339
Number of tests.......	24	24	.24	28	24	10

TABLE 3

PERCENTAGE OF HIGH EDUCATED[a] ENGAGING IN VARIOUS FORMS OF MODERN BEHAVIOR
(BY COUNTRY AND MODERNITY SCORE)

FORM OF BEHAVIOR	COUNTRY AND MODERNITY SCORE[b]											
	Argentina		Chile		India		Israel		Nigeria		East Pakistan	
	Low	High	Low	High	Low	High	Low	High	low	High	Low	High
Joined 2 or more organizations	26	48	50	61	32	31	2	6	86	97	0	6
Voted often	54	54	44	57	60	65	76	86	...	...	...	...
Talked politics with wife	40	57*	29	61***	74	80	46	72**	50	65	65	83*
Contacted official about public issue	2	9	4	17**	20	26	17	27	11	21	5	15
Read newspapers daily	40	77***	31	53**	32	61**	36	81	63	84***	35	42
High on geographic information scale	44	78***	23	60***	20	51***	29	75***	7	48***	9	53*
High on political information scale	22	56***	18	37***	22	65***	36	72***	20	48***	7	39**
High on consumer information scale	10	21**	7	39***	67	94*	29	53**	84	89	23	52***
High on opposites test	50	76	36	63***	59	86***	31	57***	59	71	47	78***
Approximate N cases.[c]	50	150	60	160	55	115	40	110	60	120	45	125

* *t*-test based on the extremes of the continuum on each form of behavior significant at the .05 level.

** Significance at the .01 level.

*** Significance at the .001 level or better. All other *t*-tests of the relation were below the .01 level.

[a] In each country the total sample was divided at the median into a "high" and "low" educated group. The average number of years of education for the high group was: Argentina: 7.6; Chile: 6.6; India: 10.2; Israel: 8.6; Nigeria: 8.5; and Pakistan: 4.8.

[b] The range of Overall Modernity Scores was split into "low"—bottom 25%, "middle"—middle 50%, and "high"—top 25% for each country's *entire* sample. Modernity scores are highly correlated with education. Since in this table only the high educated are represented, more men fall into the category of those with high as against low modernity scores.

[c] *N*s are approximate due to the disqualification of part of the sample on certain questions, e.g. those legally under age could not be expected to "vote often."

strict correspondence between modernity of *attitude* and modernity of *behavior*. The answer is partly given by considering the relation of attitudinal modernity to our several tests of information. These questions did not deal with "mere" attitudes, but obliged the respondent to prove objectively whether he really knew something. Quite consistently the men who were more modern on the attitude measures validated their status as modern men by more often correctly identifying a movie camera, naming the office held by Nehru, and locating the city of Moscow. Men with the same education but with unequal modernity scores performed very differently on these tests, with those more modern in attitude scoring high on the tests of information two or more times as often as those classified as traditional in attitude. The details are summarized in the lower part of table 3, which presents summary scale results.

We conducted a further and more exact check on the extent to which self-reported behavior is fact rather than fantasy by comparing what men claimed to do with objective tests of their actual performance. For example, we asked everyone whether or not he could read. Individuals certainly might have been tempted to exaggerate their qualifications. But later in the interview we administered a simple literacy test, asking our respondents to read a few lines from local newspaper stories we had graded for difficulty. In most settings less than 1 percent of the men who had claimed they could read failed the literacy test. They proved objectively to have been accurately and honestly reporting their reading ability. Similarly, men who claimed to use the mass media regularly were—as they should have been—better able to correctly identify individuals and places figuring prominently in world news. In Nigeria, for example, among experienced workers of low education, the proportion who could correctly identify de Gaulle as the president of the French Republic was 57 percent among those who claimed to pay only modest attention to the mass media, 83 percent among those who asserted they listened or read more often, and 93 percent among those who claimed to read a newspaper or listen to the radio almost every day. Many additional examples which test the internal consistency of attitude and behavior are summarized in table 4.[19] Clearly, the men who claim to have the attributes we score as modern give a better account of themselves on objec-

[19] For lack of space, table 4 shows the percentage whose behavior validated their oral "claim" only in the case of those falling at the extremes of the continuum on each "claim," and the *t*-tests are based on these same extremes. To leave no doubt that this outcome was not a fortuitous result of considering only the extremes, we note the gamma statistics for the full cross-tabulations including all steps in both the oral claim and the behavioral test. The five tests of the relation between claim and behavior applied in six countries yield a potential thirty tests, but some were inapplicable in certain instances. The procedure was repeated separately for the "low" and "high" educated, divided at the median in each country. For the low educated, where twenty-seven of the tests were applicable, the association of claim and behavior was in the expected direction in all cases, and the gammas ranged form 0.011 to 0.877, with a mean of 0.351 and a median of 0.334. For the high educated, the hypothesis could be tested in twenty-three full cross-tabulations. All but two of the associations were in the expected direction, the gammas ranging from −0.123 to 0.690, and over this range the mean gamma was 0.309 and the median 0.276.

TABLE 4

PERCENT[a] AMONG LOW EDUCATED[b] WHOSE PERFORMANCE ON A TEST OF BEHAVIOR ACCORDS WITH THEIR ORAL CLAIM
(BY CLAIM AND COUNTRY)

OBJECTIVE BEHAVIOR (%) AND CLAIM	COUNTRY					
	Argentina	Chile	India	Israel	Nigeria	East Pakistan
Naming 3 newspapers among those who claim to read papers:						
Rarely/Never	c	73d (356) ***	13 (582) ***	68 (28)	59 (71) ***	38
Daily		98 (85)	60 (63)	90 (119)	85 (152)	45
Correctly identifying international leader among those claiming mainly interested in:						
Other news	43 (299) **	59 (414) ***	8 (668) ***	79 (216)	7 (276) *	4 (459) **
World news	73 (30)	76 (29)	12 (26)	84 (68)	8 (73)	10 (10)
Correctly identifying international leader who claim on total information media exposure they are:						
Low	14 (51) ***	45 (196) ***	1 (71) ***	73 (45)	4 (78) *	0 (85) **
High	79 (29)	79 (76)	18 (11)	84 (38)	17 (18)	10 (40)

* .05 level of significance reached in t-tests of the difference in the proportion manifesting a given behavior in the case of those falling at the extremes of the continuum on each "claim."

** .01 level of significance.

*** .001 level of significance.

a Percentages are a proportion of the cells' base N who manifested a given behavior.

These cell Ns represent all those of low education who made the indicated behavioral claim, e.g., claimed to read a newspaper daily.

b The average number of years of education by country was Argentina: 4.5; Chile: 3.7; India: 1.0; Israel: 5.1; Nigeria: 6.2; and Pakistan: .2.

c Data unavailable for country.

d Includes "a few times a week" in "rarely or never" category.

TABLE 4—Continued

OBJECTIVE BEHAVIOR (%) AND CLAIM	COUNTRY					
	Argentina	Chile	India	Israel	Nigeria	East Pakistan
Correctly identifying Washington who claim on total information media exposure they are:						
Low.........	14 (51) ***	43 (196) ***	3 (71)	64 (44) *	3 (78) ***	2 (85)
High.........	72 (29)	70 (76)	7 (28)	90 (38)	28 (18)	3 (40)
Who can read at least a little among those who claim they:						
Can read.........	0	0	99 (408)	99 (266)	99 (346)	74 (80)

tive tests of performance. We may conclude not only that modern is as modern does, but also that modern *does* as modern *speaks*.

4. *Is the consequence of the individual modernization inevitably personal disorganization and psychic strain; or can men go through this process of rapid sociocultural change without deleterious consequences?*—Few ideas have been more popular among the social philosophers of the nineteenth and twentieth centuries than the belief that industrialization is a kind of plague which disrupts social organization, destroys cultural cohesion, and uniformly produces personal demoralization and even disintegration. Much the same idea has been expressed by many anthropologists who fear—and often have witnessed—the destruction of indigenous cultures under the massive impact of their contact with the colossus represented by the European-based colonial empires. But neither the establishment of European industry in the nineteenth century, nor the culture crisis of small preliterate peoples overwhelmed by the tidal wave of colonial expansion may be adequate models for understanding the personal effects of industrialization and urbanization in developing nations.

To test the impact on personal adjustment resulting from contact with modernizing influences in our six developing countries, we administered the Psychosomatic Symptoms Test as part of our regular questionnaire. This test is widely acknowledged to be the best available instrument for cross-cultural·assessment of psychic stress.[20] Using groups carefully matched on all other variables, we successively tested the effect of education, migration from the countryside to the city, factory employment, urban residence, and contact with the mass media as these modernizing experiences might affect scores on the Psychosomatic Symptoms Test. No one of these presumably deleterious influences consistently produced statistically significant evidence of psychic stress as judged by the test. Those who moved to the city as against those who continued in the village, those with many years as compared to those with few years of experience in the factory, those with much contact with the mass media as against those with little exposure to radio, newspaper, and movies, show about the same number of psychosomatic symptoms.

In each of six countries, we tested fourteen different matched groups, comparing those who migrated with those who did not; men with more years in the factory with those with fewer, etc. Because some of these matches did not apply in certain countries, we were left with seventy-four more or less independent tests of the proposition that being more exposed to the experiences identified with the process of modernization produces more psychosomatic symptoms. Disregarding the size of the difference and considering only the sign of the correlation between exposure to modernization

[20] Variants of the test were used with the Yoruba as reported by Leighton et al. 1963, and the Zulu as reported by Scotch and Geiger 1963–64. Details on the form of the test as we used it and the results of our investigation were presented by Alex Inkeles and David Smith to the Eighth Congress of the International Anthropological Association at Tokyo-Kyoto in September 1968 under the title "The Fate of Personal Adjustment in the Process of Modernization," and will appear in the *International Journal of Comparative Sociology*, 1970.

and psychosomatic symptoms as (+) or (−), it turns out that in thirty-four instances the results are in accord with the theory that modernization is psychologically upsetting, but in forty other matches the results are opposed to the theory. Very few of the differences in either direction, furthermore, were statistically significant. Indeed, the frequency of such statistically significant correlations was about what you would expect by chance. Of these significant differences, furthermore, only two supported the hypothesis while two contradicted it. This again suggests that only chance is at work here. We must conclude, therefore, that the theory which identifies contact with modernizing institutions and geographical and social mobility as certainly deleterious to psychic adjustment is not supported by the evidence. Indeed, it is cast in serious doubt. Whatever is producing the symptoms—and the test does everywhere yield a wide range of scores—it is something other than differential contact with the sources of modernization which is responsible.

Life does exact its toll. Those who have been long in the city and in industry but who have failed to rise in skill and earnings are somewhat more distressed. But this outcome can hardly be charged to the deleterious effects of contact with the modern world. Perhaps if we had studied the unemployed who came to the city with high hopes but failed to find work, we might have found them to have more psychosomatic symptoms. If we were faced with this finding, however, it would still be questionable whether the observed condition should be attributed to the effects of modernization. The fault would seem to lie equally in the inability of traditional agriculture to provide men with economic sustenance sufficient to hold them on the land.

We conclude, then, that modernizing institutions, per se, do not lead to greater psychic stress. We leave open the question whether the process of societal modernization in general increases social disorganization and then increases psychic tension for those experiencing such disorganization. But we are quite ready to affirm that extensive contact with the institutions introduced by modernization—such as the school, the city, the factory, and the mass media—is not in itself conducive to greater psychic stress.

Men change their societies. But the new social structures they have devised may in turn shape the men who live within the new social order. The idea that social structures influence the personal qualities of those who participate in them is, of course, as old as social science and may be found in the writings of the earliest social philosophers. Its most dramatic expression, relevant to us, was in the work of Marx, who enunciated the principle that men's consciousness is merely a reflection of their relation to the system of ownership of the means of production. The rigidity of Marx's determinism, and the counterdetermination of many people to preserve an image of man's spiritual independence and of the personal autonomy and integrity of the individual, generated profound resistance to these ideas. The idea that ownership or nonownership of the means of production determines consciousness is today not very compelling. To focus on ownership, however, is to concentrate on the impact of macrostructural forces in shaping men's attitudes and values at the expense of studying the significance of microstruc-

tural factors. Yet it may be that these microstructural features, such as are embedded in the locale and the nature of work, are prime sources of influences on men's attitudes and behavior.

In reviewing the results of our research on modernization, one must be struck by the exceptional stability with which variables such as education, factory experience, and urbanism maintain the absolute and relative strength of their impact on individual modernization despite the great variation in the culture of the men undergoing the experience and in the levels of development characterizing the countries in which they live.[21] This is not to deny the ability of the macrostructural elements of the social order to exert a determining influence on men's life condition and their response to it. But such macrostructural forces can account for only one part of the variance in individual social behavior, a part whose relative weight we have not yet measured with the required precision. When we attain that precision we may find some confirmation of popular theories, but we are also certain to discover some of them to be contradicted by the data—just as we have in our study of microstructural factors. The resolution of the competition between these two theoretical perspectives cannot be attained by rhetoric. It requires systematic measurement and the confrontation of facts however far they are marshalled in the service of ideas. The facts *we* have gathered leave *us* in no doubt that microstructural forces have great power to shape attitudes, values, and behavior in regular ways at standard or constant rates within a wide variety of macrostructural settings.

REFERENCES

Dawson, J. L. M. 1967. "Traditional versus Western Attitudes in Africa: The Construction, Validation and Application of a Measuring Device." *British Journal of Social and Clinical Psychology* 6(2):81–96.

Doob, L. W. 1967. "Scales for Assaying Psychological Modernization in Africa." *Public Opinion Quarterly* 31:414–21.

Dreeben, R. 1968. *On What Is Learned in School.* Reading, Mass.: Addison-Wesley.

Inkeles, A. 1960. "Industrial Man: The Relation of Status, Experience and Value." *American Journal of Sociology* 66:1–31.

———. 1966. "The Modernization of Man." In *Modernization,* edited by M. Weiner. New York: Basic Books.

———. Forthcoming. "A Model of the Modern Man." In *Cross-Cultural Research in Developing Areas,* edited by William A. Faunce and Herbert Garfinkel. East Lansing, Mich.: Social Science Research Bureau and New York: Free Press.

Inkeles, A., and David H. Smith. Forthcoming. "The Fate of Personal Adjustment in the Process of Modernization." *International Journal of Comparative Sociology.*

Kahl, J. A. 1968. *The Measurement of Modernism, a Study of Values in Brazil and Mexico.* Austin and London: University of Texas Press.

Leighton, Alexander H., T. A. Lambo, C. G. Hughes, D. C. Leighton, J. M. Murphy, and D. B. Macklon. 1963. *Psychiatric Disorder among the Yoruba.* Ithaca, N.Y.: Cornell University Press.

Scotch, Norman A., and H. J. Geiger. 1963–64. "An Index of Symptom and Disease in Zulu Culture." *Human Organization* 22(4):304–11.

Smith, David H., and Alex Inkeles. 1966. "The OM Scale: A Comparative Socio-Psychological Measure of Individual Modernity." *Sociometry* 29:353–77.

[21] This idea is more fully elaborated in Inkeles 1960.

Racial Change in a Stable Community[1]

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A Chicago community experiencing racial transition is compared with an all-white control area to test the common assumption that transition is necessarily accompanied by a "flight" of whites, with a consequent abnormally high rate of property turnover (i.e., "instability"). It is found, through an inspection of property turnover records and by comparison of numbers of "For Sale" signs in the two areas, that the transition community shows no signs of instability. The assumption of a necessary link between transition and instability is thus rejected; implications for the goal of residential racial integration are discussed.

It is commonly assumed that residential racial succession is accompanied by a condition of "instability." First, there is instability in the obvious sense that racial composition is changing. Second, there is instability in the less trivial sense that the amount of household turnover in the area is particularly high—presumably due to a tendency for whites to "flee" a changing neighborhood (see, e.g., the summary of this view in McEntire 1960, pp. 77–87). This latter sort of instability is the focus of the present study. It is defined for operational simplicity as the extent to which the proportion of residential properties placed and sold on the housing market is appropriate to the age, housing type, location, and other nonracial characteristics of a particular area. An increase in such property turnover is often regarded not only as a partial cause of neighborhood change but as a key inhibiting factor to the development of residential racial integration in American cities. Thus, a commonly favored intervention policy in changing areas has involved an attempt to convince local whites to remain and to create the amenities which will aid in their retention (Abrahamson 1959; Biddle and Biddle 1965; Fish et al. 1966).

This research departs from this perspective and attempts to document the existence in Chicago of a large community which is experiencing racial transition while at the same time exhibiting important symptoms of remarkable stability. In the course of a two-year participant observation study of the community in question (Molotch 1968), certain evidences were uncovered which suggest that instability and racial change may be

two distinct community phenomena—at least in Chicago in the mid-1960s. If correct, such a proposition would indicate that it is quite possible for neighborhood change to proceed as an orderly transition from all-white to all-Negro occupancy without the occurrence of certain processes (e.g., "flight" of whites, rapid collapse of neighborhood institutions) often considered endemic to the succession process. Perhaps at the same time, the existence of such a community can alert those who value racially integrated neighborhoods to some important strategy clues.

TABLE 1

A COMPARISON OF SOUTH SHORE AND ROGERS PARK*

Variable	Rogers Park	South Shore
Population characteristics:		
Foreign stock (%).....................	48.4	42.2
Under 18 years of age (%)...............	21.0	21.4
Over 65 years of age (%)...............	14.2	15.7
Years of median schooling...............	12.2	12.2
Males in white-collar occupations (%).....	66.2	62.6
Median family income...................	$ 7,465	$ 7,888
Persons 5 years and older living in different house in 1955 (%).....................	61.1	54.6
Four years of college or more (%).........	12.8	13.3
Housing characteristics:		
Population per household...............	2.41	2.52
Owner-occupied (%).....................	11.3	21.1
Substandard (%).......................	2.6	2.0
Median value of units..................	$20,300	$19,500
Median rent...........................	$110.00	$112.00
Median number of rooms per unit.........	3.9	4.2
Built 1950 or later......................	6.3	6.2
Year when building activity declined after housing stock "matured"...............	1930	1935
Location of community..................	Directly on Lake Michigan, 6400–7600 North	Directly on Lake Michigan, 6700–8300 South

* SOURCE.—Kitagawa and Taeuber 1963.

The community under study is South Shore—an area of approximately 75,000 persons, and traditionally the home of middle-class and upper-middle-class Chicago whites. Its housing stock was, in 1960, basically sound and of mixed varieties with 75 percent of residents living in apartments. In terms of the class and ethnicity of its residents, as well as in terms of almost all other major characteristics (table 1), South Shore was typical of those communities which Fishbein (1962) and others (Taeuber and Taeuber 1965) have described as most likely to experience racial change. Like an increasing number of citizens in transition areas, South Shore residents had formed a strong community organization (the South Shore Commission, one of the country's largest) devoted to the goal of achieving biracial stability.

Despite the existence of such an effort, there would seem to be little doubt that South Shore's racial composition was changing rather rapidly compared with other Chicago communities also experiencing racial change in the 1960s. Data based on birth and death records, as well as changes in public school composition, would indicate that a larger number of Negroes moved into South Shore between 1960 and 1966 than into almost any other Chicago community (Hospital Planning Council for Metropolitan Chicago 1966).[2] The Negro population of the area is estimated to have increased from 152 to 18,407 during the six-year interval.

Similarly, racial head counts taken in South Shore schools reveal a classic succession pattern with school after school changing from all-white to all-Negro status as the "racial line" moved across the community.[3] By 1966, the community's population was approximately 25 percent Negro, with most Negroes living in those portions of the community (the northern and western sections) nearest to long-established Negro residential areas outside of South Shore.

GENERAL STRATEGY

No American community is completely stable; one of every five Americans changes residence each year. The precise question to be answered is not "is South Shore stable?" but "is it stable relative to other communities which are similar in every way except that they are not experiencing racial change?" The decision was made to compare South Shore in terms of rates of property turnover with the most similar nonracially changing all-white community.

The community selected for comparative purposes was Rogers Park, another of Chicago's seventy-five "Community Areas,"[4] and one which bears a striking similarity to South Shore. Both areas are on the lake shore and almost equidistant from the Loop; South Shore begins sixty-seven blocks south of the city center, and Rogers Park begins sixty-four blocks north. The far-north location of Rogers Park, however, places it at a distance from the edge of the city's Negro residential area; in this sense, it was one of the least "threatened" of all metropolitan communities. There have been no publicized "pressures" to integrate the area (although a few

[2] See also the article on racial migration in the *Chicago Daily News*, May 11, 1967. Detailed descriptions of this report and other relevant data are contained elsewhere (Molotch 1968).

[3] Racial composition of all South Shore schools is contained in the following publications for the school year indicated: 1963 data, *Chicago Sun Times*, October 24, 1963; 1964, 1965 data, *Southeast Economist*, October 17, 1965; 1966 data, *Southeast Economist*, October 23, 1966. The changing composition of South Shore's schools is treated in detail elsewhere (Molotch 1968).

[4] These areas were originally demarcated by Burgess and Newcomb (1933) and have been used extensively for purposes of research and dispensing social services over the years. Boundaries and 1960 census data summaries for all seventy-five community areas have been compiled by Kitagawa and Taeuber (1963).

Negro families are said to be in residence); real estate men who were interviewed in the area reported few cases of racial confrontations in their offices, and all who were probed on the subject regarded the area as "stable" and "firm."[5] Despite the existence of aging buildings and some scattered decay (also shared by other older areas such as South Shore), a recent descriptive analysis of Rogers Park by a Chicago newspaper could accurately bear the headline: "Rogers Park: A Community with Few Problems."[6]

The resemblance between the two areas was, apart from the racial variable, indeed very strong—in income, education, and ethnicity of population; in condition, age, and type of housing stock; and, as observed by the writer, in visual appearances which are projected to the casual visitor. Table 1 presents a comparison of the two communities along seventeen variables considered as possibly relevant to residential mobility rates.

SOURCE OF DATA

Because of certain difficulties arising from the manner in which records are maintained by the Office of the Cook County Recorder of Deeds, an alternative source of property transfer data was used: the listings of property transactions in *Realty and Building* (hereafter cited as *R & B*), the trade journal of the Chicago real estate industry.[7]

Since the editors of *R & B* reprint only a portion of the Recorders' records and ignore others, such as instances where complicated land assemblages take place or where property lines are revised, it was necessary to test for possible bias in the reprinted records. A geographical breakdown of total transfers was made for the listing in *R & B* and compared with a similar breakdown included in the annual report of the Cook County Recorder of Deeds (Office of the Cook County Recorder of Deeds 1967). Because it is the only breakdown made in the annual report, the comparison consisted of numbers of transfers within the city as opposed to the number within Cook County suburbs. The geographical divisions utilized in *R & B* permitted the creation of a similar comparison of city versus suburbs. The proportions derived from two different information sources were nearly identical (0.40 vs. 0.42), thus providing some evidence that the data source is unbiased. This is, of course, a very imperfect test, but the best which available data permit. It should be noted, in addition, that the numbers of transfers for any given area are understated in *R & B* records (and thus in the tables which follow) but are presumed to be equally understated among all areas.

[5] Interviews with real estate men in South Shore, Rogers Park, and other areas were carried out as part of a larger study (Molotch 1968; Smolensky, Becker, and Molotch 1968).

[6] *Chicago Daily News*, April 6, 1967, p. 48. As part of the same series of articles describing various Chicago communities, the installment on South Shore was headlined: "South Shore: Can It Keep the Racial Balance" (*Chicago Daily News*, March 23, 1967, p. 64).

[7] *Realty and Building* (Chicago), vol. 156,

PROCEDURES FOLLOWED

All property transfers reprinted in *R & B* for the period July–December 1966 were totaled for Rogers Park and South Shore.[8] It should be noted that, during the period selected for study, South Shore had a racial composition (about 25 percent Negro) which most writers on the subject consider being past the "tipping point" which is alleged to precede white flight (Weaver 1956; Abrams 1955, p. 311). Property type (house, apartment building, or store) was determined by reference to Sanborn Maps for the relevant city area.

RESULTS: PROPERTY TRANSFER RATES

For each type of property existing in the two areas, the number transferred to new owners was divided by the total number of such properties located in the community to yield a series of property transfer rates for each locale. The findings thus generated reveal that, regardless of property type, South Shore appears to be either as stable as Rogers Park or *more* stable than Rogers Park. The results are contained in table 2.

INTERPRETING TABLE 2

Two different comparisons of home transfers are derived on the basis of two different conceptions of what constitutes the appropriate base figure for total number of "homes" in each area. In the first instance, the total number of structures having one, two, three, or four units is used; in the second, the total number of owner-occupied dwelling units is used. These two different bases are used because neither is perfect. The problem emerges from the fact that census categories specifying structures having one, two, three, or four units include all such structures, regardless of whether or not one or more units within the structure is owner-occupied. Sanborn Maps, on the other hand, label with a "D" (the symbol used to indicate a private home) such one-, two-, three-, and four-dwelling unit structures which are *owner-occupied*. Other such structures are labeled as small apartment buildings on Sanborn Maps. Thus because of this slight noncomparability of data, a case can be made that either owner-occupied or number of structures having one to four units is appropriate for present purposes. The number of cases involved in the ambiguity is small, however, because almost all such "home" structures are single-family dwellings. In addition, it will be noted that the results are similar regardless of which source of base data is used.[9]

[8] The rather complicated sequence of steps necessary to accomplish this task is reported elsewhere (Molotch 1968, chap. 8).

[9] Several additional methodological explanations need to be made. All South Shore data refer to the area as defined by the South Shore Commission and most local residents, which is a slight departure from the "community area" as defined by the *Local Community Fact Book* for Chicago. Computation of base data was thus complicated by the fact that community boundaries sometimes bisected census tracts. The commission re-

TABLE 2

PROPERTY TRANSFERS IN ROGERS PARK AND SOUTH SHORE

Property Type	South Shore			Rogers Park			
	Number of Cases (1)	Total Number of Such Properties in Area (Base) (2)	Transfer Rate Index (3) (1÷2)	Number of Cases (4)	Total Number of Such Properties in Area (Base) (5)	Transfer Rate Index (6) (4÷5)	χ^2 ᵃ (7)
1-, 2-, 3-, or 4-family structures.	105	8,878	1.18%	43	3,083	1.39%	0.842**
1-, 2-, 3-, or 4-family structures (using owner-occupied for base data).	105	8,320	1.26%	43	2,781	1.54%	1.153**
Condominium units.	0	Unknown	...	5	Unknown	...	...
Apartment buildings.	20	Unknown	...	15	Unknown	.	
Apartment units (estimated).	282ᵇ	25,675ᶜ	1.09%	422ᵇ	20,393ᶜ	2.06%	7.851*
Retailing structures.	7	Unknown		7	Unknown		
Retailing front lots (estimated).	13ᵈ	545ᵉ	2.38%	16ᵈ	496ᵉ	3.22%	0.67**
Miscellaneous and unclassified (vacant land, warehousing, etc.).	7	Unknown	...	5	Unknown	...	...

ᵃ Results of significance tests are presented in spite of the fact that certain assumptions, such as independence, are not strictly met. They may serve, nevertheless, as rough analytical guides (see Gold 1969).

ᵇ Computed on the assumption of three apartments for each 25 ft. of width and 50 ft. of depth multiplied by number of floors in structure.

ᶜ Renter-occupied units, U.S. census.

ᵈ Determined by visual inspection of Sanborn Maps with each 50 ft. of frontage taken to constitute one front lot.

ᵉ Refers to number of stores, U.S. census.

* Significant at .01 level.

** Not significant.

DISCUSSION

For apartment units, Rogers Park is *less* stable than South Shore, with a transfer rate higher than in the racially changing community. One of the classic explanations for instability in apartment areas experiencing racial change is that such instability is stimulated or at least intensified by "operators" who move into the local market and buy property which they "turn" and "milk dry" by forgoing maintenance (see Bercovici 1924; Cressey 1930; Molotch 1968). As a result, it is said, whites are "forced out." Such was the view held by many white residents of the South Shore area. A similar theme emerged often in interviews with real estate men who utilized the same theory, although often expressed in different terms, to "explain" why neighborhoods "turn" where and when they do. The low rate of apartment building turnover in South Shore relative to Rogers Park would indicate that such a process is not occurring. Thus, to the extent that such tactics are the source of mobility among tenants, this finding can be regarded as evidence of stability in the rental market. Perhaps tenants, like homeowners, are not "fleeing" from South Shore.

Similarly, there was evidence to suggest that such speculation was not occurring in the home market either. The classic notion here is that certain real estate firms induce whites to sell their houses quickly and cheaply so that they can be resold by the real estate man to Negroes at a premium price. In the present case, during the six-month period under investigation, not a single instance was found where a home was sold and then resold in South Shore. Scheitinger (1948), in his study of the racial transition of Chicago's Oakland community in the 1940s, found many instances of such double sales; and, somewhat more recently, Rapkin and Grigsby (1960) found at least some speculation in changing Philadelphia areas. That none was uncovered in South Shore would seem to provide additional evidence of stability in the area.

VARIATION ACROSS CENSUS TRACTS

It is possible to reason that, although the overall rates of transfer are similar in Rogers Park and South Shore, there may be different patterns

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gards South Shore's territory as extending slightly farther to the south and slightly less far to the west than community area *Fact Book* demarcations. Thus the total number of owner-occupied dwellings was computed by use of census *block* data. Base totals for number of structures having one, two, three, or four units were derived by dividing the total number of two-family structures by 2, the number of three- and four-unit structures by 3.2 (an arbitrary figure based upon an estimate of the proportion of three- as opposed to four-family structures in the area), and adding the derived quotients to the total number of single-family structures. Data on number of units within structures are not published by census block; thus, for those South Shore tracts bisected by boundary lines, totals for bisected tracts were multiplied by the proportion of tract area located in South Shore, and resultant products were added to other tract totals. Total numbers of stores (treated as comparable to the number of fifty-foot storefronts) and numbers of apartments were derived from census tract data, with tracts overlapping community boundaries treated in a similar manner.

of turnover within the two communities which would imply that whites were, indeed, fleeing from at least *some parts* of South Shore. More precisely, it could be argued that, in certain tracts (perhaps those recently opened to Negroes), there was a high degree of turnover which was balanced out by an extremely low rate of mobility in other tracts (e.g., all-white areas) where residents "freeze" during a period of racial uncertainty.

The evidence, however, is not consistent with such an alternative explanation. Single-family house transfer rates in South Shore varied from a low of zero (in one small tract with few houses) to a high of 2.6; the analogous extreme figures for Rogers Park were 0.04 and 3.0. The standard deviation across tracts was slightly higher for Rogers Park (9.8) than for South Shore (7.9).

"FOR SALE" SIGN COUNTS

It might be argued that the stability which has been found to characterize South Shore's home-owning population is one of involuntary stability forced upon residents unable to find buyers (or at least "satisfactory" buyers)

TABLE 3

MOBILITY WISH INDEXES FOR SOUTH SHORE AND ROGERS PARK

	South Shore	Rogers Park
Number of signs......................	141	43
Number of housing units owner-occupied..	8,320	2,613*
Mobility Wish Index..................	1.69%	1.64%

* There are 2,781 owner-occupied housing units in Rogers Park. Because one tract (a "peninsula" constituting the northeast tip of the area) was inadvertently not checked during the sign count, the number of owner-occupied units within that tract was subtracted from the total.

in a market depressed by racial change. To test this proposition, a comparison was made of South Shore and Rogers Park in terms of the proportions of homeowners who *wanted* to sell their homes. In order to gain a measure of this "mobility wish," every front block of both areas was inspected, and the total number of For Sale signs in front of one-, two-, three-, and four-family homes was recorded and divided by the total number of such dwellings in each area to yield a "Mobility Wish Index." The For Sale sign counts were made twice for South Shore and once for Rogers Park. Comparison is made here between "counts" for the two areas taken during the first week of December 1966. (Touring all streets of South Shore required approximately four days, and Rogers Park required three.)

It is clear from the results contained in table 3 that desired mobility is the same in Rogers Park and South Shore. Again, evidence would indicate that South Shore is stable; there are no signs of "flight" by homeowners from this racially changing neighborhood.

Attention must be paid to a possible objection to the use of For Sale signs as an index of a mobility wish. There may be a difference in the degree

to which home sellers utilize such signs in the two areas. It may be, for example, that South Shore's white sellers desist from using such signs for fear of alienating their neighbors—or because they think such signs would endanger community "morale," which they feel an obligation to protect. To be certain that such was not the case, a random sample of real estate firms in South Shore and all real estate firms in Rogers Park (as listed in neighborhood telephone directories) were visited; officials were asked for lists of all homes they had for sale in the two areas. Each home on the lists thus accumulated was visually inspected. The total number of signs in each area was computed and then divided by the number of homes listed for sale in each community. The results, as set forth in table 4, indicate an equal propensity to sell with a For Sale sign in the two areas.

THE EFFECTS OF "RACIAL VIOLENCE" UPON STABILITY

It is often observed by those commenting on racial change processes that, whereas a community can remain somewhat stable for a period of time, racial "incidents" are bound to occur, and it is such incidents which act

TABLE 4

PROPENSITY TO UTILIZE "FOR SALE" SIGNS TO SELL HOMES
IN SOUTH SHORE AND ROGERS PARK

	South Shore	Rogers Park
Number of dealers interviewed who had houses for sale.....	9	7
Number of houses on all lists............................	74	33
Number of signs.......................................	23	11
Number of signs as a percentage of total homes listed for sale.	31%	33%

as a catalyst for the white exodus. Many interviews with community leaders, local citizens, as well as inspection of various documents and newspapers indicated that South Shore was generally free of such "incidents"— at least until a "riot" occurred at the high school serving the community. The fracas was widely and prominently reported by the daily press, radio, and television. The melée was allegedly begun by a group of Negro youths who, during lunch period, shouted in unison the war chant of a notorious youth gang (the Blackstone Rangers) and then engaged in shouting, throwing furniture, breaking windows, etc., until police arrived and restored order. Approximately twelve students were injured. Within the week, an emergency community meeting was held at the high school with an attendance (virtually all white) which flowed beyond the auditorium corridors and into classroom hallways. I was present at the meeting and circulated among the standing groups of worried citizens, engaging them in conversation and picking up bits and pieces of conversation. Particularly at the meeting's close, after hearing pledges from local police and school authorities that their children would be protected from further harm, the consensus

of the audience seemed to be that, in the words of more than one resident, "the whole thing [the security program] is a farce." Resident after resident was heard to remark, "I'm going to put my house up for sale"; "I'm selling; there's nothing else that can be done"; "What else can I do but move?" and "I'm calling a broker."

In light of the manifest attitudes of so many South Shore residents, it is surprising to note that the high school incident seems to have had no immediate effect upon the number of houses in the area placed on the housing market. A count of For Sale signs was made November 1 through November 4, the days immediately following the high school incident. A second count (reported earlier for purposes of comparison with Rogers Park) was made December 2 through December 6—approximately one month later. It is assumed that the first count describes the state of the housing market "before" the incident; it would take several days for a homeowner to contact a real estate firm, sign a contract, and have a sign placed on his property. The second count is assumed to reflect any changes wrought by the incident; a month would seem to be enough time to make the necessary arrangements to place one's home on the market. The results of the two counts were as follows: the November count revealed a total of 150 houses for sale; the count a month later indicated 141 houses for sale. The slight drop in the number of houses for sale would seem inconsistent with the notion that such incidents as the one described above bring with them a swift and dramatic white exodus. At least this did not occur in South Shore.

STABILITY AND TRANSITION IN SOUTH SHORE: A CONCLUSION

In retrospect, it should not seem surprising that a community in which resident whites seem disposed to remain can nevertheless experience complete racial change over a relatively brief period. In the year 1960, just prior to the influx of Negroes into the area, 54.6 percent of South Shore residents were living in a household different from the one they occupied in 1955 (Kitagawa and Taeuber 1963, p. 3). During this period, the mobility of South Shore residents was approximately equal to the analogous figure for the city of Chicago as a whole (53.4 percent). With such rates of mobility, it is thus conceivable that the entire population of a community could replace itself within a period of ten or fifteen years through normal turnover. True, some persons tend to remain in a single place for their entire lives (Jay 1956); it is probably this minority which ends up making a "racial move" from a home which ultimately will be surrounded by a Negro residential area.

But most persons, including those in South Shore, change their residence for very mundane reasons: to begin a new household, to be nearer a job, to own a home of one's own, to secure larger quarters for a growing family, or to gain an environment deemed appropriate to a rising social status (Rossi 1955).

That important life decisions continue to be made on the basis of such

mundane criteria—even in the face of Negro in-migration— should not be surprising. Other investigators have provided evidence that racial change may, indeed, not have some of the dramatic consequences often attributed to it. Rapkin and Grigsby (1960) have found that, in changing Philadelphia communities, white home purchasing continues during transition, although at a declining rate with propinquity to all-Negro blocks. Consistent with the major finding of the present research (i.e., stability during transition), the same authors as well as others (e.g., Schietinger 1951; Laurenti 1960) have discovered that property values tend to remain constant or increase with Negro in-migration.[10] This would be the expected economic consequence of a *stable supply* of housing units in a context of stable or rising demand from a combined Negro-white pool of purchasers. Other studies have demonstrated a willingness on the part of whites to remain in, or even move into, biracial areas as long as certain practical benefits such as space or convenience to work could be achieved. The work of Mayer (1960) and Grier and Grier (1960) indicates the salience of these factors, as opposed to "pro" or "anti" Negro attitudes, as determinates of community racial composition.

It may very well be that some form of anti-Negro "prejudice" prompted some South Shore residents to leave their community (who would not otherwise have done so) and that measures used in the present study were not sufficiently sensitive to tap such mobility. But it does seem that the existence of such motivations is not a significant determinant of South Shore's all-Negro fate. *It is likely that a similar number of persons would have changed their residence no matter what racial conditions existed in the area.* The speed of racial change characteristic of South Shore may seem at first glance to be so high as to indicate that only a flight of white residents could make it possible. But when viewed in the context of the high mobility rate of the general urban population, it becomes perfectly reasonable for such a racial change process to occur within the context of a market characterized by normal turnover. Normal mobility makes neighborhood racial change *possible;* when Negroes constitute the bulk of those who move into the vacancies which result, racial change is made *inevitable.*

IMPLICATIONS FOR RACIAL INTEGRATION

Any conclusions drawn from a study such as this must be tentative; they result from a case study of one changing community at a particular juncture in its racial history. Additional investigations are needed if the implications of the present findings are to be treated with confidence.

But if South Shore is becoming an all-Negro area despite the fact that whites are not "fleeing," the conclusion is suggested that the basis for achieving racial integration in such an area is *not* in convincing whites to remain in a changing neighborhood. It happens that in South Shore the

[10] There have been other studies, however, which indicate that property values may also decline with Negro in-migration (Wheeler 1962; Palmore and Howe 1962). Perhaps these were instances of rapid property turnover during transition.

leaders of the major community organization, perhaps in their wisdom, paid minimal attention to this sort of strategy. Perhaps they were aware that the key must lie in the local real estate market forces which cause the preponderance of the *relatively* few (but *absolutely* many) vacancies which occur through normal mobility processes to be filled by Negro families.

Involved, no doubt, are conscious decisions by real estate men which influence this process as well as a reluctance of whites living elsewhere *to move into* a changing neighborhood. Also involved are the relationships of supply and demand which exist within *and between* the Negro and white housing markets. These are concerns beyond the scope of the present effort, which has sought only to indicate that there are important signs that whites living in a rather typical changing urban community are quite willing to remain where they are and do not display behaviors which are an impediment to neighborhood racial integration. They behave in a manner consistent with community stability; it is other factors and other forces which render that resultant stability inadequate as a sufficient cause for neighborhood racial integration.[11]

REFERENCES

Abrahamson, Julia. 1959. *A Neighborhood Finds Itself.* New York: Harper.

Abrams,.Charles. 1955. *Forbidden Neighbors: A Study of Prejudice in Housing.* New York: Harper.

Bercovici, Konrad. 1924. *Around the World in New York.* New York: Appleton-Century-Crofts.

Biddle, William, and Loureide Biddle. 1965. *The Community Development Process.* New York: Holt, Rinehart & Winston.

Burgess, Ernest, and Charles Newcomb (eds.). 1933. *Census Data of the City of Chicago.* Chicago: University of Chicago Press.

Cressey, Paul. 1930. "Succession of Cultural Groups in the City of Chicago." Ph.D. dissertation, University of Chicago.

Fish, John, et al. 1966. *The Edge of the Ghetto: A Study of Church Involvement in Community Organization.* Chicago: Divinity School, University of Chicago.

Fishbein, Annette. 1962. "The Expansion of Negro Residential Areas in Chicago." Master's dissertation, University of Chicago.

Gold, David. 1969. "Statistical Tests and Substantive Significance." *American Sociologist* 4 (February):42–46.

Grier, George, and Eunice Grier. 1960. *Privately Developed Interracial Housing: An Analysis of Experience.* Berkeley: University of California Press.

Hospital Planning Council for Metropolitan Chicago. 1966. "Chicago Regional Hospital Study." Multilithed. Chicago: Chicago Association of Commerce and Industry.

Jay, Florence E. 1956. "Those Who Stay: A Sociological Study of the Stability of a Community." Ph.D. dissertation, University of Pittsburgh.

Kitagawa, Evelyn, and Karl Taeuber (eds.). 1963. *Local Community Fact Book: Chicago Metropolitan Area, 1960.* Chicago: Chicago Community Inventory, University of Chicago.

Laurenti, Luigi. 1960. *Property Values and Race.* Berkeley: University of California Press.

McEntire, Davis. 1960. *Residence and Race.* Berkeley: University of California Press.

Mayer, Albert. 1960. "Russel Woods: Change without Conflict, a Case Study of Neighborhood Racial Change in Detroit." In *Studies in Housing and Minority Groups,* edited by Nathan Glazer and Davis McEntire. Berkeley: University of California Press.

[11] A discussion of some of these factors is contained elsewhere (Molotch 1968).

Marriage Plans and Educational Aspirations[1]

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Data from a national sample of 4,000 high school students indicate that aptitude, socioeconomic background, and marital plans each exert an independent influence on the educational aspirations of both males and females. The direct effect of marriage intentions on educational aspirations is shown to be especially marked for girls. Plans for future research employing a longitudinal design to explore the effects of marriage on educational aspirations and on educational attainment are briefly noted.

The relationship between socioeconomic status, ability, sex, and the educational aspirations of youth have been well documented and consistently verified in sociological and psychological literature (see Sewell 1964; Sewell and Shah 1968a, 1968b). However, the relationships of other personal and sociodemographic factors with educational aspirations have been studied less and, in general, have been viewed with suspicion if "adequate controls" have not been introduced for SES, IQ, and sex. Indeed, if statistical control for these three variables has not been introduced in a research design, the results and implications of reported relationships between numerous other independent variables and educational aspirations have been generally dismissed as assumed methodological artifacts.

In a recently completed study of predictors of marital outcomes, it was observed that there is a high correlation between the marital plans of young people and their educational aspirations (Bayer 1969). Relatively weaker relationships were observed between marital plans and both socioeconomic status and academic aptitude. These comparative by-product results of the study are thus suggestive of a possible strong independent influence exerted by marital plans on educational aspirations. This paper presents an analysis to explore this hypothesis.

THE DATA

SAMPLE

In 1960 the American Institutes for Research, with support from the Cooperative Research Program of the U.S. Office of Education, initiated Project Talent, a nationwide study of American youth enrolled in grades 9–12.

Approximately 73,000 twelfth-grade students in the stratified random sample of high schools throughout the United States completed the two-day battery of tests and inventories.[2] A random subsample of 2,000 males and 2,000 females with complete information on selected variables was drawn from this national sample. With the exception of the aptitude scores, which are one-fourth to one-third of a standard deviation higher for the subsample than for the complete grade sample, the means and variances of the sub-sample and the population estimates based on the sample are similar for the remaining variables employed in this paper (table 1).[3]

TABLE 1

MEANS AND STANDARD DEVIATIONS OF VARIABLES EMPLOYED IN THE ANALYSIS, BY SEX: STUDY SUBSAMPLE AND 1960 HIGH SCHOOL– SENIOR POPULATION ESTIMATES

| | STUDY SAMPLE | | | | POPULATION ESTIMATE† | | | |
| | Males | | Females | | Males | | Females | |
VARIABLES*	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Aptitude com- posite score.	575.4	111.6	559.0	104.5	539.5	126.5	534.0	112.3
Socioeconomic index score..	100.4	9.1	99.9	8.9	100.0	10.0	99.2	9.3
Marital-plans recode......	5.5	1.4	4.4	1.5	5.8	1.5	4.6	1.6
Educational- aspirations recode......	2.6	1.0	2.1	0.9	2.5	1.1	2.1	0.9

* See text for a description of the variables and coding procedures.

† Based on total Project TALENT twelfth-grade sample weighted to adjust for stratified sampling ratios. Data derived from unpublished tabulations and from distributions and statistics reported in John C. Flanagan et al. (1964, pp. 5-25, 5-28, 13-5).

VARIABLES

The aptitude variable is a composite score derived from more than 750 items dealing with arithmetic and mathematics, English usage, vocabulary, reading comprehension, and abstract reasoning in the Project Talent test battery (see Flanagan et al. 1964). Scores are standardized to have a complete age-group population mean of 500 and a standard deviation of 100.

The socioeconomic index is a composite score based on nine items from

[2] A comprehensive discussion of the Project TALENT research design in presented by John C. Flanagan et al. (1962).

[3] It has been shown elsewhere that the rate of complete response to the TALENT test battery is related to aptitude level (Flanagan et al. 1964, p. 5-5). The effect of introducing a restriction of complete data on selected variables is thus to introduce the reported aptitude bias into the study subsample. However, it is assumed that there is minimal bias in the relationships between the variables employed in this analysis.

the battery. Included are items on father's occupation, father's and mother's education, family income, and the number of family possessions in specified categories (see Shaycoft 1967). The computed socioeconomic composite scores are standardized on the twelfth-grade high school boys, with a mean of 100 and a standard deviation of 10.

The marriage-plans variable is based on the 1960 responses to a question on what age the participant expects to be when he gets married. This item is coded in the following categories: (1) age 17 or under, (2) age 18, (3) age 19, (4) age 20, (5) age 21–22, (6) age 23–24, (7) age 25–26, and (8) age 27 or older.

The criterion variable is a measure of educational aspiration, based on the stated amount of education the participant expected to receive at the time he was enrolled in twelfth grade. Responses to the item are coded as

TABLE 2

ZERO-ORDER CORRELATIONS BETWEEN APTITUDE, SOCIOECONOMIC STATUS, MARITAL PLANS, AND EDUCATIONAL ASPIRATIONS

Variable	Aptitude Score	Socieconomic Index	Marital Plans	Educational Aspirations
Aptitude score.................	...	.418	.201	.563
Socioeconomic index............	.374	...	.151	.435
Marital plans.................	.241	.164	...	.289
Educational aspirations..........	.477	.419	.457	...

NOTE.—Correlation coefficients above the diagonal are for males; those below the diagonal are for females.

follows: (1) no post-high school education plans, (2) some post-high school education planned, but less than four years of college, (3) plan to receive a four-year college education only, and (4) plan to complete college and study for an advanced degree.

The means and standard deviations, by sex, for each of these four variables described above are shown in table 1 for the present sample and for the estimated total 1960 grade-12 population.

RESULTS

The gross interrelationships among the four variables are shown in the matrix of zero-order correlation coefficients (table 2). All coefficients are positive and statistically significant for both males and females. For males, SES alone accounts for 19 percent of the variance in educational aspirations, aptitude alone explains 32 percent of the variance, and marital plans alone explain 8 percent of the variance in the criterion. For females, SES alone accounts for 18 percent of the variance in educational aspirations, aptitude alone explains 23 percent of the variance, and marital plans alone explain 21 percent of the variance in the criterion.

The multiple-regression equation of all three predictor (independent) variables on the criterion (dependent) variable yields an R of .63 for the

males and .64 for the females. That is, 39 percent of the variance in educational aspirations of the males and 41 percent of the variance in educational aspirations of the females is accounted for by aptitude, SES, and marriage plans while in high school.

While the results discussed above yield some information on the effect of the predictor variables on educational aspirations, the correlational analyses do not allow the assessment of the *relative* influence of each antecedent variable on the consequent variables. Path analysis does, however, achieve this objective by making explicit the assumptions underlying the analytical model and by elucidating the indirect effects of the independent variables in the model (see Duncan 1966). The path coefficients are partial-regression coefficients in standard form, the β-coefficients, and measure the relative effect of one variable on another while controlling for the other variables in the same system.

The direct effect of SES on educational aspirations is reflected by the path coefficient of .228 for males and .250 for females (fig. 1).[4] The indirect effect—the difference between the zero-order correlation with the dependent variable and the path coefficient—of the socioeconomic variable is almost one-half (47.6 percent) of the total influence of this variable for the males and two-fifths (40.3 percent) for the females. The indirect effect, through marital plans, of SES on educational aspirations is reflected in a coefficient of .01 for males (.081 × .167) and a coefficient of .03 for females˙ (.085 × .343).

The direct effect of ability on educational aspirations is reflected by the path coefficient of .435 for males and .301 for females. The indirect effect of the ability measure on educational aspirations is more than one-fifth (22.7 percent) of the total influence of this variable for the males and more than one-third (36.9 percent) for the females. The indirect effect, through marital plans, of ability on educational aspirations is reflected in a coefficient of .03 for males (.167 × .167) and a coefficient of .07 for females (.210 × .343).
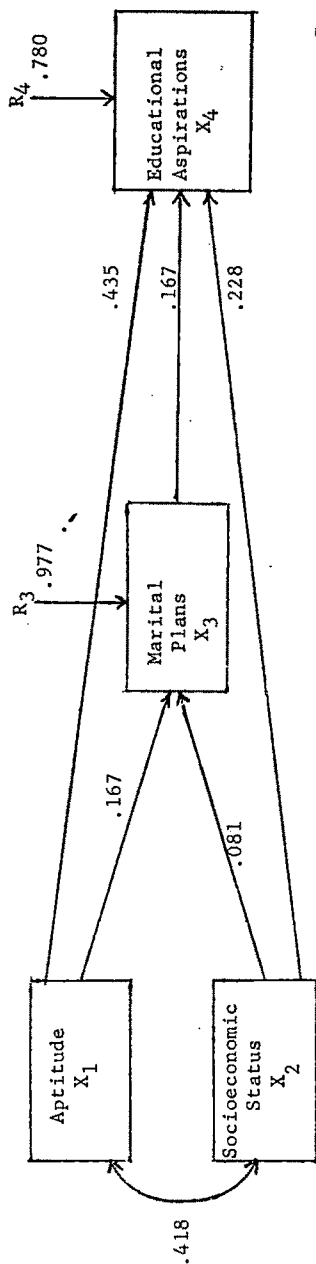
The net *independent* influence of marriage plans on educational aspirations is substantial. For males, the effect of marital plans on educational aspirations, independent of SES and ability, is reflected in the path coefficient of .167. For females, the comparable figure for the effect of marital plans on educational aspirations, independent of the other two predictor variables, is .343. For the males, 42.2 percent ([.289 − .167]/.289) of the contribution of marriage plans in predicting educational aspirations is attributable to the indirect effects of the other antecedent variables rather than to the effects of marriage plans per se. For females, only one-fourth ([.457 − .343]/.457) is a spurious result of the preceding variables.

SUMMARY AND CONCLUSION

In summary, the analysis reported above indicates that aptitude, SES, and marital plans each exert a strong independent influence on the educational aspirations of both male and female high school seniors. The direct effect of
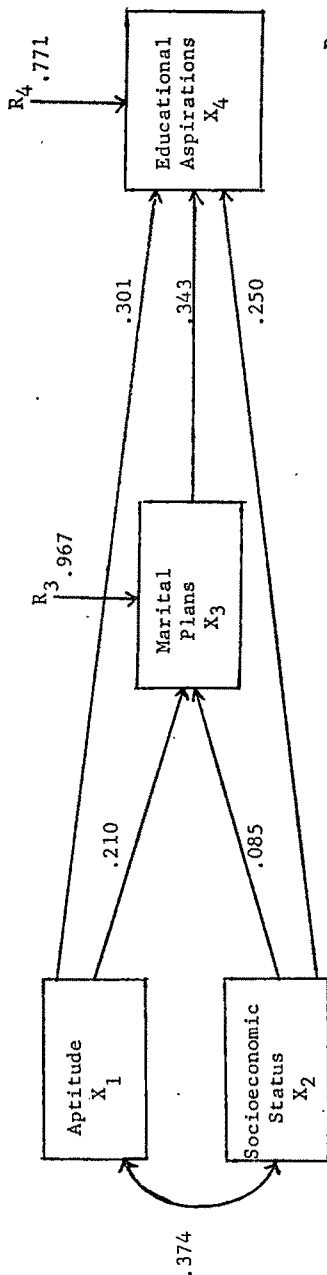
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[4] All path coefficients in fig. 1 are more than twice the standard error of the β-coefficients.

MALES

R_3 .977

R_4 .780

.435

.167

.228

.167

.081

Aptitude X_1

Socioeconomic Status X_2

Marital Plans X_3

Educational Aspirations X_4

.418

$R_{4\cdot321}$=.626

FEMALES

R_3 .967

R_4 .771

.301

.343

.250

.210

.085

Aptitude X_1

Socioeconomic Status X_2

Marital Plans X_3

Educational Aspirations X_4

.374

$R_{4\cdot321}$=.637

Fig. 1.—Path diagrams relating educational aspirations to aptitude, SES, and marital plans, by sex

marital plans on educational aspirations is especially marked for girls. Nevertheless, the path diagrams show that there are very large residuals (unexplained variance) and indicate that either (1) educational aspirations are largely unpredictable and highly fortuitous, or (2) additional variables need to be incorporated into the prediction system. The second conclusion would appear to be a more gratifying research mandate to most educational researchers.

A longitudinal research program currently under way at the American Council on Education is designed to continue the study of the effects of a large number of student background and environmental factors on both educational aspirations and educational attainment (see Astin et al. 1966).[5] These analyses will explore further the independent effects of both marriage plans and marital outcomes on these educational-criterion measures.

REFERENCES

Astin, Alexander W., Robert J. Panos, and John A. Creager. 1966. "A Program of Longitudinal Research in the Higher Educational System." *American Council on Education, Research Reports* 1 (February):1–42.
Bayer, Alan E. 1969. "Life Plans and Marriage Age: An Application of Path Analysis." *Journal of Marriage and the Family* 31 (August).
Duncan, Otis D. 1966. "Path Analysis: Sociological Examples." *American Journal of Sociology* 72 (July):1–16.
Flanagan, John C., John T. Dailey, Marion F. Shaycoft, William A. Gorham, David B. Orr, and Isadore Goldberg. 1962. *Design for a Study of American Youth.* New York: Houghton Mifflin.
Flanagan, John C., Frederick B. Davis, John T. Dailey, Marion F. Shaycoft, David B. Orr, Isadore Goldberg, and Clinton A. Neyman, Jr. 1964. *The American High School Student.* Cooperative Research Report no. 635. Pittsburgh: University of Pittsburgh and Project TALENT.
Sewell, William H. 1964. "Community of Residence and College Plans." *American Sociological Review* 29 (February):24–38.
Sewell, William H., and Vimal P. Shah. 1968a. "Social Class, Parental Encouragement, and Educational Aspirations." *American Journal of Sociology* 73 (March):559–72.
———. 1968b. "Parents' Education and Children's Educational Aspirations and Achievements." *American Sociological Review* 33 (April):191–209.
Shaycoft, Marion F. 1967. *The High School Years: Growth in Cognitive Skills.* Pittsburgh: University of Pittsburgh and Project TALENT.

[5] The use of these longitudinal data to assess the effect of early marital plans on subsequent educational attainment will also rule out the possibility that the direction of the relationship between marital plans and educational aspirations which is assumed in this paper may actually be reversed. That is, the data from the panel study reported in this paper may partially reflect the situation where, for example, a girl with no definite plans for marriage decides (for whatever reasons) that college is not for her and then may subsequently decide that she had better start looking for a husband.

Theory, Deduction, and Rules of Correspondence[1]

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Causal models are strictly untestable with a single indicator for each variable, unless one assumes very slight measurement error. With multiple indicators for each variable, incorporated as an extension of the causal model, estimates of the path coefficients may be derived that are subject to sampling variability but are not distorted in the same manner as estimates based on single indicators. Under certain specified conditions, the coefficients thus derived will be inconsistent, thus providing a clue to the existence of nonrandom measurement error of specific kinds. In this paper, procedures for two-indicator and three-indicator models are explored.

The requirement that scientific theories include both abstract concepts and concrete implications, and that the two be logically connected, has been treated rather casually by sociologists. Traditionally, sociological theorists have focused on abstractions with loose and ill-defined implications about matters of fact. More recently, some sociological formulations have shifted to the opposite extreme, stating only connections between measures, without any attempt to make more abstract claims. Either of these modes of theory construction is costly, sacrificing either the clarity of empirical implications or the integrating potential of abstract concepts. Although the literature of the philosophy of science has provided us with terms for referring to the gap between abstract conceptions and concrete events—*rules of correspondence, epistemic correlations, operational definitions,* and *indicators of abstract dimensions*—these terms do little more than remind us that the gap is there. They do not provide clear guidelines for bridging the gap and suggest no criteria for determining the adequacy of the more or less arbitrarily devised connections between abstract and empirical levels. Clearly, the empirical testing of abstract theories must remain somewhat loose until some strategies for dealing with this problem are devised. To the degree that rules of correspondence are weak and subject to distorting errors, deductions about matters of fact must be regarded as uncertain and possibly misleading.

This general problem is explored in the present paper, not as a problem in semantics—which is the common way of treating it—but as a special problem in theory construction. The general strategy to be employed consists of including the rules of correspondence as an auxiliary part of the theory. The auxiliary theory will thus consist of statements connecting ab-

stract dimensions and their empirical indicators, statements which will be treated like other theoretical propositions. The implications that may then be deduced allow, under certain conditions, two different kinds of decisions to be made empirically. First, one may determine whether particular indicators are inadequate for testing the implications of a specific abstract formulation because of artifactual measurement error. Second, if the indicators are not found inadequate, one may determine whether the abstract formulation itself is tenable. Although the second kind of decision—the tenability of the abstract formulation itself—is the crucial decision in the final analysis, some decision on the adequacy of the indicators is a prerequisite.

This attempt to treat the problem of rules of correspondence in a formal way builds quite explicitly on the work of others and owes much to their lead. It represents an extension of their work rather than a major departure from their approach. Blalock (1968), following Northrop, has argued convincingly for the necessity of two languages—a theoretical and an operational language—and has suggested that the connections between the two be expressed in an auxiliary theory. I will follow Blalock in representing the auxiliary theory in the form of an explicit causal model. Siegel and Hodge (1968), building on the work of Blalock, Duncan, and Wright, have utilized causal models representing auxiliary theories to investigate the effects of measurement error on the correlation between selected variables. Their detailed work, along with that of Blalock, sets the tone for the present discussion.

We will begin with a discussion of specific desiderata that auxiliary theories should help to achieve, illustrating the problems encountered with simple models incorporating highly simplified auxiliary theories. We will then move to a discussion of auxiliary theories more nearly adequate to the tasks outlined in the earlier discussion.

We consider first a relatively simple model proposing a one-way causal relation between two abstract variables; it may be summarized in the proposition that a change in X leads to a change in Y, but not the reverse, and may be represented graphically by an arrow from X to Y. An auxiliary theory providing one indicator for each of the abstract variables is added. We assume that the indicators are "reflectors" of the abstract variables, that is, that a change in the abstract variable will lead to a change in its own indicator, and we represent these connections with arrows from abstract variable to indicator.[2] The model representing the basic theoretical proposition and the auxiliary theory is shown in figure 1. Associated with each of the three arrows in this causal diagram is a coefficient representing the regression of one variable on another, assuming all variables to be in the form of standard measures. These coefficients may take any value from -1 to 1. Arrows from unspecified sources are added in the graphic representation of the model to represent variation not accounted for in the model;

[2] In experimental studies the indicators of independent variables may be treated as "producers" rather than "reflectors" of the abstract variables, and the connection would be represented by arrows from indicator to abstract variable. Somewhat different problems are presented by the experimental case, which is not discussed in this paper.

specifically, when the coefficients a, b, and c are less than unity in absolute value, these additional arrows may be assigned values such that all of the variance is "accounted for" either by the model or by unspecified sources. In this model we make the usual assumption for causal models that there are no common sources of error variance, or, referring to the algebraic representation of the model, following Simon (1959), that all error terms are uncorrelated.

Ideally, we would be able to estimate the magnitudes of the three unknown coefficients in the model. In this case, however, we have only one observed correlation, $r_{X'Y'}$, and although the model implies that this correlation is a function of the three unknown coefficients ($r_{X'Y'} = abc$, where a, b, and c are path coefficients as shown in fig. 1), this single equation in three unknowns does not provide unique solutions for the coefficients without further assumptions. Assuming knowledge only of the signs of the epistemic coefficients a and c, which is not an unreasonable assumption, it
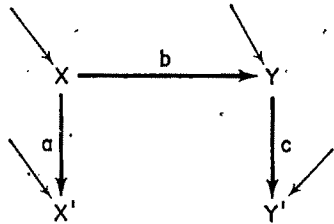
FIG. 1.—Two-variable model with one indicator for each variable

is possible to draw a conclusion about only the sign of the coefficient between abstract variables, b, from knowledge of the sign of the observed correlation, $r_{X'Y'}$. But this is a weak deduction at best and would have limited utility in making further deductions if this miniature model were to be incorporated as a unit into a more complex model involving several abstract variables. Our usual procedure in "testing" causal models with only one indicator for each abstract variable is to take the correlation between indicators as the correlation between the corresponding abstract variables. In so doing we are, in effect, assuming that the epistemic coefficients are either 1 or else very high and subject only to minor random errors. If both epistemic coefficients are less than unity—and they should usually be assumed to be so—$r_{X'Y'}$ will be a biased estimate of the coefficient between abstract variables, underestimating that coefficient to the degree that the product of the epistemic coefficients is less than unity. Such bias of typically unknown degree in the estimates of the abstract coefficients seriously hampers efforts to test certain implications of more complex models, although the disadvantage of this conservative bias is not made immediately evident by the very simple model of figure 1.

There is, however, the possibility of another kind of error more pernicious than random errors of measurement. With an auxiliary theory that provides

only one indicator for each abstract variable, this more pernicious error remains unrecognizable. If the two indicators in figure 1 have common sources of error not shown in the model, the observed correlation between indicators may yield a heavily distorted estimate of the coefficient between abstract variables even beyond the distortion that is attributable to random error. This kind of indicator error is represented by the two models in figure 2, which do not exhaust the possibilities. Each of the models in figure 2 represents an alternative to the model of figure 1, alternatives in which the error terms for the figure 1 model would be correlated, contrary to assumption. The pernicious character of this kind of measurement error is that if it is present we may be grossly misled, and, with only one indicator for each abstract variable, its presence cannot be readily recognized. Even if such error is suspected, its influence cannot be disentangled from the influence of the causal connections explicitly represented in the other parts of the model.

The traditional language of measurement error includes no term for this specific kind. The measurement error represented in the models of figure 2

A   **B**
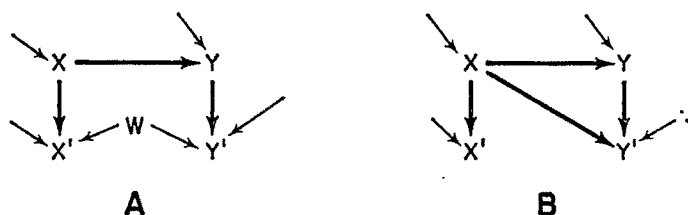
Fig. 2.—Two-variable model with one indicator for each variable and differential bias

is not *constant error* as we ordinarily think of it, that is, an identical quantity added to or subtracted from every measure; such constant error would be uncorrelated with any other variable and hence of no consequence in a causal model. Neither is it *random error*. And it is not *correlated error* in its usual meaning—that is, error magnitudes correlated with the magnitude of the true value. The measurement error in the models of figure 2 is a *differential constant error*, that is, an error that would be constant over repeated measurement for a given case but variable over cases so that this constant error is correlated with another indicator in the model. The general notion of such differential constant error, or *differential bias*, as I shall call it, is quite familiar, although a general term for designating it is not. For example, when arrests are used as an indicator of the incidence of crime in different areas of the city, the abstract correlation between social class and crime, thus measured, is presumably exaggerated because of differential bias. The economic characteristics of areas affect not only the incidence of crime but also the degree of error in arrests as an indicator of the incidence of crime. Figure 2B represents this general kind of circumstance in abstract form, that is, the independent variable has an effect on the indicator of the dependent variable both through the dependent variable and directly. A different kind of differential bias is represented in figure 2A. For example,

when two abstract variables are measured by responses to verbal statements and both sets of responses are affected by "social desirability" response sets, the correlation between the errors in the two indicators will lead to a distorted estimate of the correlation between the two abstract variables because of this additional common source of variation in the indicators. Differential bias, then, is not a new idea, although this particular way of representing it in the form of unwanted connections between indicators in a causal model may not be familiar. Unlike random error, differential bias does not necessarily lead to an underestimation, on the average, of the correlation between the abstract variables, and its effects cannot be taken into account by utilizing such familiar devices as sampling distributions or a "correction for attenuation," which are based on the assumption of random errors. Ideally, auxiliary theories would be so constructed that differential bias, if present, would be recognizable empirically. This is evidently not the case with such simple auxiliary theories as those represented in figures 1 and 2.
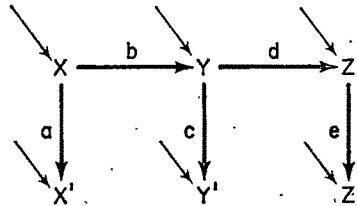
FIG. 3.—Three-variable model with one indicator for each variable

Now we consider a slightly more complex model in which three abstract variables are linked in a causal sequence, with one indicator for each. The model is shown in figure 3.[3] Reference to this model will allow consideration of still another problem, in testing the implications of causal models, that formal auxiliary theories would, ideally, help to resolve.

With epistemic coefficients a, c, and e of 1, this model would imply that $r_{X'Z'}$, $r_{X'Y'}$, and $r_{Y'Z'}$ are nonzero and that $r_{X'Z'} = r_{X'Y'}r_{Y'Z'}$. The empirical tenability of this implication would provide the clue as to whether additional causal connections between abstract variables X and Z should be added to the model. But with epistemic coefficients less than unity in absolute value, this implication will not, in general, be true. In fact, with epistemic coefficients less than unity in absolute value, and with only one indicator for each abstract variable, it is not at all clear how a decision on this implication of the model can be made empirically except by some rather casual rule of thumb. Blalock (1961, pp. 148–55) has shown that random error in the measurement of the intervening variable is especially troublesome in this regard, whereas random error in the measurement of the other two variables is much less critical. But an auxiliary theory, ideally, would go

[3] A precisely parallel problem is encountered if the model is changed by reversing the arrow between X and Y, that is, if the relationship bewteen X and Z is spurious.

further and allow a test of the implications of the abstract model on the abstract plane, uncomplicated by measurement error; the extension to still more complex models would then be relatively straightforward. This is not possible with the auxiliary theory represented in figure 3, even in the absence of any differential bias; the presence of differential bias would complicate the matter still further.

We have now enumerated and illustrated very briefly three desiderata that should ideally be accomplishable by utilizing an auxiliary theory formally representing the connections between abstract variables and their indicators. First, it should be possible to arrive at an estimate for each of the unknown coefficients, including the epistemic coefficients. Second, it should be possible to recognize differential bias, if present, and thereby recognize the inappropriateness of particular indicators in the test of a specific formulation. And third, it should be possible to test the implications of the causal connections incorporated on the abstract plane of the model, without resorting to the grossly oversimplified assumption that the epistemic coefficients are so close to unity as to be of no concern.
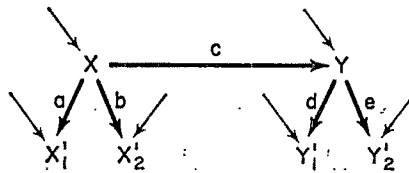

FIG. 4.—Two-variable model with two indicators for each variable

We can achieve these desiderata quite adequately if our auxiliary theory provides at least three indicators for each abstract variable in the model; we achieve them somewhat less completely if our auxiliary theory provides only two indicators for each abstract variable, provided the model on the abstract plane is not unduly complicated. For simplicity, we concentrate here on models that propose only one path between each pair of abstract variables. The general line of reasoning should apply to more complex models, provided they are identifiable (on the identification problem, see Fisher 1966). We consider first auxiliary models that provide only two indicators for each abstract variable and then proceed to consider models providing three indicators.

TWO-INDICATOR MODELS

Figure 4 represents the model identical, on the abstract plane, with the model of figure 1, but now with an auxiliary theory that provides two indicators for each abstract variable. We assume that the correlation between all pairs of indicators is known; hence, instead of one observed correlation as in figure 1, we now have six observed correlations. With the assumption of un-

correlated error terms, each of these six observed correlations may be expressed as a function of the five unknown coefficients as follows:

$$r_{x_1'x_2'} = ab , \tag{1}$$

$$r_{y_1'y_2'} = de , \tag{2}$$

$$r_{x_1'y_1'} = acd , \tag{3}$$

$$r_{x_1'y_2'} = ace , \tag{4}$$

$$r_{x_2'y_1'} = bcd , \tag{5}$$

$$r_{x_2'y_2'} = bce . \tag{6}$$

These six equations allow an empirically testable deduction that serves as a clue to the presence of certain kinds of differential bias. It is evident that the model implies nonzero rs and

$$(r_{x_1'y_1'})(r_{x_2'y_2'}) = (r_{x_1'y_2'})(r_{x_2'y_1'}) . \tag{7}$$

This may be shown by substituting the equivalents for these correlations in terms of unknown coefficients, which yields

$$(acd)(bce) = (ace)(bcd) , \tag{8}$$

$$abc^2de = abc^2de . \tag{9}$$

If differential bias is present, as illustrated in figure 5A, equation (7) will not hold. In figure 5A, we have

$$x_1'y_1' = acd , \tag{3'}$$

$$r_{x_1'y_2'} = ace , \tag{4'}$$

$$r_{x_2'y_1'} = bcd + fg , \tag{5'}$$

$$r_{x_2'y_2'} = bce , \tag{6'}$$

and

$$r_{x_1'y_1'}r_{x_2'y_2'} \neq r_{x_1'y_2'}r_{x_2'y_1'}, \tag{10}$$

since

$$(acd)(bce) \neq (ace)(bcd + fg) . \tag{11}$$

In general, when differential bias provides an additional source of common variance between two and only two indicators, or when different amounts of additional common variance between different pairs of indicators are supplied by differential bias, equation (7) will not hold. However, equation (7) *will* hold for the kind of differential bias illustrated in figure 5B.
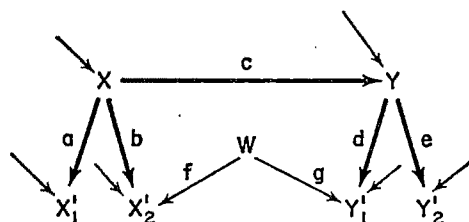
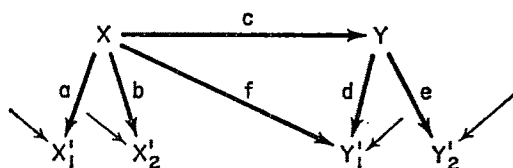In figure 5B, we have:

$$r_{X'_1 Y'_1} = acd + af,$$ (3'')

$$r_{X'_1 Y'_2} = ace,$$ (4'')

$$r_{X'_2 Y'_1} = bcd + bf,$$ (5'')

$$r_{X'_2 Y'_2} = bce;$$ (6'')

Fig. 5.—Two-variable models with two indicators for each variable and differential bias

and equation (7) holds, that is,

$$(r_{X'_1 Y'_1})(r_{X'_2 Y'_2}) = (r_{X'_1 Y'_2})(r_{X'_2 Y'_1}),$$

since

$$(acd + af)(bce) = (ace)(bcd + bf),$$

$$abc^2de + abcef = abc^2de + abcef.$$

For two-indicator models, equation (7), which we will call the "consistency criterion" for two-indicator models, is thus a necessary, but not a sufficient, condition for the absence of differential bias. If this equation holds exactly, the two estimates for a given path coefficient will be identical; otherwise the two estimates for a given coefficient will be unequal. Failure of the data to satisfy this equation, at least approximately, indicates that, in some respect, the indicators provided in the auxiliary theory are not appropriate for testing the abstract model. With only two indicators for each abstract

variable, no test that is sufficient for ruling out all kinds of differential bias has been devised. But if equation (7) holds, unique estimates for each coefficient in the model may be computed, and the other desiderata previously outlined may be fulfilled in a relatively straightforward fashion. We return to figure 4 for a discussion of these other desiderata.

The six equations generated by the model of figure 4 (i.e., equations [1], [2], [3], [4], [5], and [6]) yield two estimates for each unknown coefficient; these two estimates will be identical if equation 7 is exactly satisfied. Alternatively, the satisfaction of the consistency criterion uses one of the six equations, leaving five equations in five unknowns which may be solved to yield unique solutions for the unknown coefficients. The solutions[4] are:

$$c^2 = \frac{(r_{X_1'Y_1'})(r_{X_2'Y_1'})}{(r_{X_1X_2'})(r_{Y_1Y_2'})} = \frac{(r_{X_1'Y_1'})(r_{X_2'Y_2'})}{(r_{X_1X_2'})(r_{Y_1Y_2'})}, \tag{12}$$

$$a^2 = (r_{X_1X_2'})\frac{(r_{X_1'Y_1'})}{(r_{X_2'Y_2'})} = (r_{X_1X_2'})\frac{(r_{X_1'Y_1'})}{(r_{X_2'Y_1'})}, \tag{13}$$

$$b^2 = (r_{X_1X_2'})\frac{(r_{X_2'Y_2'})}{(r_{X_1'Y_2'})} = (r_{X_1X_2'})\frac{(r_{X_2'Y_1'})}{(r_{X_1'Y_1'})}, \tag{14}$$

$$d^2 = (r_{Y_1Y_2'})\frac{(r_{X_2'Y_1'})}{(r_{X_2'Y_2'})} = (r_{Y_1Y_2'})\frac{(r_{X_1'Y_1'})}{(r_{X_1'Y_2'})}, \tag{15}$$

$$e^2 = (r_{Y_1Y_2'})\frac{(r_{X_2'Y_2'})}{(r_{X_2'Y_1'})} = (r_{Y_1Y_2'})\frac{(r_{X_1'Y_1'})}{(r_{X_1'Y_1'})}. \tag{16}$$

[4] The solutions, stated in terms of squares, leave the signs of the corresponding path coefficients formally ambiguous. First, it should be noted that it is empirically possible for the squares representing these solutions to be negative—an outcome clearly inconsistent with the implications of the model and therefore requiring a modification in it. Assuming that all squares representing solutions are positive, the determination of the signs of the coefficients is still ambiguous, since either the positive or the negative root could be taken. Furthermore, different patterns of signs in the path coefficients may yield an identical pattern of signs in the observed correlations. For example, if all indicators are inverse indicators of their respective abstract variables, the pattern of signs among the observed correlations would be identical to that obtaining if all indicators are direct indicators of their respective abstract variables. This ambiguity must be resolved by making a priori assumptions about the signs of the epistemic coefficients, that is, assumptions as to whether each indicator is a direct or an inverse indicator of its abstract variable. With these assumptions, the sign of the path coefficients connecting abstract variables is no longer ambiguous; that is, the sign of that path is the same as the sign of the observed correlation between two direct indicators or two inverse indicators and opposite to the sign of the observed correlation between a direct and an inverse indicator. Assumptions about the signs of the epistemic coefficients must, of course, be consistent with the observed correlations between indicators of the same abstract variable; for example, if two indicators of the same abstract variable are negatively correlated with each other, both cannot be assumed to be direct indicators of that variable and both cannot be assumed to be inverse indicators of that variable.

The potentiality for obtaining empirical estimates for each of the unknown coefficients of the model fulfills another of the desiderata for auxiliary theories outlined above. The possibility of deriving estimates for the epistemic coefficients bears comment, especially since they may be given more importance than they properly deserve. It is not the case that such empirically estimated epistemic coefficients provide a solution to the "semantic problem" frequently alluded to in discussing the problem of devising appropriate indicators. The empirically estimated epistemic coefficients estimate the correlation between each specific indicator and the abstract variable that is assigned a particular role in the model on the abstract plane; they have no bearing whatsoever on the appropriateness, in terms of conventional meanings, of the terms that are attached to the
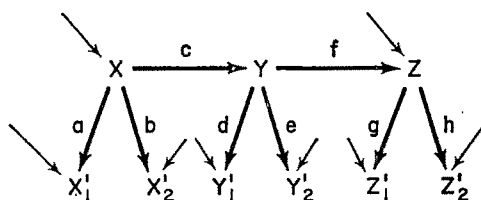

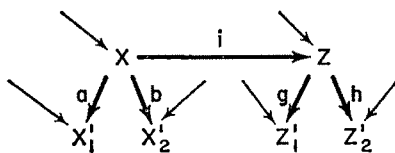FIG. 6.—Three-variable model with two indicators for each variable

FIG. 7.—The model of fig. 6 with the intervening variable omitted

abstract variables. The epistemic coefficients thus do not provide a solution to the semantic aspects of the problem of indicator validity. They provide only an estimate of the degree to which extraneous factors and random error influence an indicator's service as indicator of an abstract variable that takes its meaning both from the role it is assigned in the abstract model and from the total set of indicators that are provided for it in the auxiliary theory.

We now move to the third of the desiderata for auxiliary theories outlined above. Ideally, we have noted, an auxiliary theory would allow a test of the implications of causal models on the abstract plane, uncomplicated by problems of measurement error. Figure 6 represents an abstract model in which such an implication on the abstract plane emerges, and reference to that figure will facilitate discussion. For easy reference, figure 7 presents the model represented in figure 6 with the intervening variable omitted. It should be clear from the preceding discussion that the consistency criterion must, in this instance, be satisfied in three different ways, that is, with respect to that segment of the model involving X and Y and their

indicators, Y and Z and their indicators, and X and Z and their indicators. If the consistency criterion is not satisfied in any one of these three tests, some of the indicators are subject to differential bias and hence not appropriate to test the abstract model as a whole. If the consistency criterion is satisfied in all three of these tests, it should be evident that we could proceed to derive a solution for each of the three coefficients between abstract variables, c, f, and i. Such solutions are based on equations analogous to equation (12) for c^2. With solutions for the coefficients between abstract variables, it is no longer necessary to work with the directly observed correlations in testing the implications of the model on the abstract plane. The solutions for the coefficients on the abstract plane may be used instead. Thus the implication of the model in figure 6 is that

$$cf = i \, . \tag{17}$$

This, rather than any equation involving the directly observed correlations, provides a test for the abstract model. A high degree of random measurement error in the indicators for the intervening variable no longer has
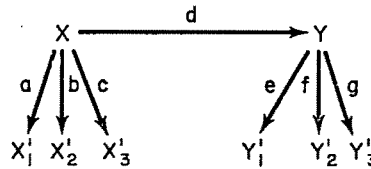

FIG. 8.—Two-variable model with three indicators for each variable

such serious implications as it does when one must work with the directly observed correlations, although such random measurement error will increase the random variation in the solutions for unknown coefficients involving that intervening variable, that is, c and f.

THREE-INDICATOR MODELS.

Figure 8 represents the model identical, on the abstract plane, with the model of figure 1, but now with an auxiliary theory that provides three indicators for each abstract variable. Again we assume that the correlation between all pairs of indicators is known; hence we have fifteen observed correlations, three between indicators of X, three between indicators of Y, and nine between indicators of X and Y. There are two general ways to proceed to obtain estimates of the unknown coefficients in this model, and each procedure provides different clues to the presence of differential bias. On the one hand, we may take the indicators for each abstract variable in pairs and proceed exactly as in the two-indicator case with the nine two-indicator models thus formed. On the other hand, we may take advantage of the fact that with three indicators for each abstract variable, the epistemic coefficients may be estimated utilizing only that fragment of the model which constitutes the auxiliary theory for that abstract variable.

Using the solutions thus obtained, we may then proceed to obtain additional estimates of the coefficient linking the abstract variables. If the model is uncomplicated by any kind of differential bias, the several estimates derived by the two procedures for each coefficient should all be identical except for random error; inconsistencies will serve as clues to differential bias, as elaborated below.

We first consider the procedure of forming nine two-indicator models from the single three-indicator model. One such two-indicator model may be formed from each set of pairs of indicators for each abstract variable, that is, X_1' and X_2' combined with Y_1' and Y_2', X_1' and X_3' combined with Y_1' and Y_2', etc. In a manner analogous to that described above, we obtain a consistency-criterion equation for each of the nine two-indicator models, each analogous to equation (7) above. These nine consistency-criterion equations will have the form

$$(r_{X_h' Y_i'})(r_{X_j' Y_k'}) = (r_{X_h' Y_k'})(r_{X_j' Y_i'}) , \tag{18}$$

where h, i, j, and k each assume the values 1, 2, and 3 subject to the restriction that $h \neq j$ and $i \neq k$.[5]

As before, the failure of any one of these equations to be satisfied indicates the presence of differential bias of the type illustrated in figure 9A, and the specific consistency-criterion equations that fail to hold will locate the indicators having a common source of variance not represented in the original model. For figure 9A, for example, showing a common source of variance between X_3' and Y_1', all consistency-criterion equations involving both of these indicators would fail to hold. For the model of figure 9A all the remaining consistency-criterion equations should be true except for random measurement error.

Each of the nine two-indicator models which can be formed from a single three-indicator model will yield two estimates of the abstract coefficient, d, for a total of eighteen such estimates. For example, in a manner analogous to that for obtaining equation (12) above, we obtain

$$d^2 = \frac{(r_{X_1' Y_1'})(r_{X_2' Y_1'})}{(r_{X_1' X_2'})(r_{Y_1' Y_2'})} = \frac{(r_{X_1' Y_1'})(r_{X_1' Y_2'})}{(r_{X_1' X_2'})(r_{Y_1' Y_2'})} \tag{19}$$

from the two-indicator model involving X_1', X_2', Y_1', and Y_2'. These two estimates will be identical if the corresponding consistency-criterion equation holds, that is, if $(r_{X_1' Y_2'})(r_{X_2' Y_1'}) = (r_{X_1' Y_1'})(r_{X_2' Y_2'})$. Eight additional pairs of estimates for d^2 may be analogously obtained. All have the form

$$d^2 = \frac{(r_{X_h' Y_i'})(r_{X_j' Y_k'})}{(r_{X_h' X_j'})(r_{Y_i' Y_k'})} = \frac{(r_{X_h' Y_k'})(r_{X_j' Y_i'})}{(r_{X_h' X_j'})(r_{Y_i' Y_k'})} , \tag{20}$$

[5] Although thirty-six such equations may be formed, only nine are distinct, since the order of the rs on a given side of the equality sign is irrelevant. Thus, for example, $(r_{X_1' Y_2'})(r_{X_2' Y_3'}) = (r_{X_1' Y_3'})(r_{X_2' Y_2'})$ is the same equation as $(r_{X_2' Y_3'})(r_{X_1' Y_2'}) = (r_{X_2' Y_2'})(r_{X_1' Y_3'})$.

where h, i, j, and k each assume the values 1, 2, and 3 subject to the restriction that $h \neq j$ and $i \neq k$.

Although the satisfaction of the nine consistency-criterion equations implies that each pair of such estimates should be equal, the satisfaction of these consistency-criterion equations is not, in itself, sufficient to imply that equality obtains between pairs. As previously noted in the discussion of two-indicator models, the satisfaction of such consistency-criterion equations
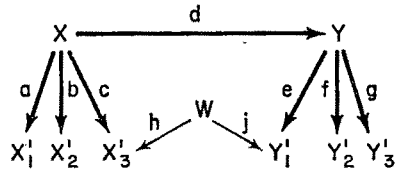
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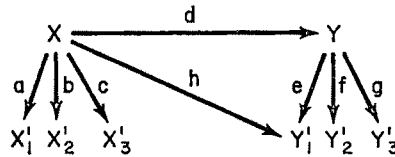
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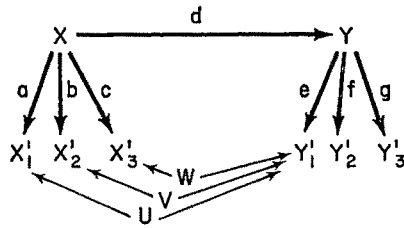
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Fig. 9.—Two-variable models with three indicators for each variable and differential bias

is not sufficient to imply the absence of differential bias of the kind illustrated in figure 9B, even though differential bias of the kind illustrated in figure 9A will lead to the failure of some of these equations to hold. An additional criterion can be specified for three-indicator models which, if satisfied, will be sufficient to imply the absence of the kind of differential bias illustrated in figure 9B. This requires that we obtain additional estimates of the abstract coefficient, d, by a different route.

Referring once again to figure 8 and assuming no common sources of variance between the indicators X_1', X_2', and X_3' except their common dependence on the abstract variable, X, we may express the correlations between these three indicators in terms of epistemic coefficients as follows:

$$r_{X_1'X_2'} = ab , \tag{21}$$

$$r_{X_1'X_3'} = ac , \tag{22}$$

$$r_{X_2'X_3'} = bc . \tag{23}$$

By simple algebra we obtain the following estimates for the squares of each of these epistemic coefficients:

$$a^2 = \frac{(r_{X_1'X_2'})(r_{X_1'X_3'})}{r_{X_2'X_3'}} , \tag{24}$$

$$b^2 = \frac{(r_{X_1'X_2'})(r_{X_2'X_3'})}{r_{X_1'X_3'}} , \tag{25}$$

$$c^2 = \frac{(r_{X_1'X_3'})(r_{X_2'X_3'})}{r_{X_1'X_2'}} . \tag{26}$$

In an analogous manner, we obtain the following equations for the correlations between Y indicators:

$$r_{Y_1'Y_2'} = ef , \tag{27}$$

$$r_{Y_1'Y_3'} = eg , \tag{28}$$

$$r_{Y_2'Y_3'} = fg . \tag{29}$$

And the following estimates for the squares of the epistemic coefficients for Y may be obtained as simple algebraic solutions of the three equations above:

$$e^2 = \frac{(r_{Y_1'Y_2'})(r_{Y_1'Y_3'})}{r_{Y_2'Y_3'}} , \tag{30}$$

$$f^2 = \frac{(r_{Y_1'Y_2'})(r_{Y_2'Y_3'})}{r_{Y_1'Y_3'}} , \tag{31}$$

$$g^2 = \frac{(r_{Y_1'Y_3'})(r_{Y_2'Y_3'})}{r_{Y_1'Y_2'}} . \tag{32}$$

We note further that, with the same assumption of uncorrelated error terms, the model of figure 8 also implies

$$r_{X_1'Y_1'} = ade \,, \tag{33}$$

$$r_{X_1'Y_2'} = adf \,, \tag{34}$$

$$r_{X_1'Y_3'} = adg \,, \tag{35}$$

$$r_{X_2'Y_1'} = bde \,, \tag{36}$$

$$r_{X_2'Y_2'} = bdf \,, \tag{37}$$

$$r_{X_2'Y_3'} = bdg \,, \tag{38}$$

$$r_{X_3'Y_1'} = cde \,, \tag{39}$$

$$r_{X_3'Y_2'} = cdf \,, \tag{40}$$

$$r_{X_3'Y_3'} = cdg \,. \tag{41}$$

Squaring both sides of these equations and substituting in them the solutions given above (equations [24], [25], [26], [30], [31], and [32]) for the epistemic coefficients, we obtain nine additional estimates for d^2. All will have the form

$$d^2 = \frac{(r^2_{X_h'Y_i'})(r_{X_j'X_k'})(r_{Y_m'Y_n'})}{(r_{X_h'X_i'})(r_{X_h'X_k'})(r_{Y_i'Y_m'})(r_{Y_i'Y_n'})} \,, \tag{42}$$

where h, i, j, k, m, and n each assume the values 1, 2, and 3, subject to the restriction that $h \neq j \neq k$ and $i \neq m \neq n$.

In the absence of differential bias (i.e., as in the model of fig. 8) all nine estimates of d^2 should be identical, except for random measurement error. The model of figure 9A, on the other hand, involves differential bias and will not yield identical estimates. That model yields a set of nine equations identical with equations (33)–(41), except that equation (39) will be

$$r_{X_3'Y_1'} = cde + hj \,, \tag{39'}$$

and the one estimate of d^2 based on $r_{X_3'Y_1'}$ will be an overestimate if hj is positive, that is,

$$d^2 < \frac{(r^2_{X_3'Y_1'})(r_{X_1'X_2'})(r_{Y_2'Y_3'})}{(r_{X_1'X_3'})(r_{X_2'X_3'})(r_{Y_1'Y_3'})(r_{Y_1'Y_2'})} \,. \tag{43}$$

As previously noted, the presence of differential bias of the type represented in figure 9A would also have been indicated by the fact that certain of the consistency-criterion equations (having the form of equation [18]) would fail to hold. However, the consistency of the nine estimates for d^2 given by equations having the form of equation (42) will also be sensitive to

the presence of differential bias of the type represented in figure 9B. In the model of figure 9B

$$r_{X_1'Y_1'} = ade + ah, \tag{33'}$$

$$r_{X_2'Y_1'} = bde + bh, \tag{36'}$$

and

$$r_{X_3'Y_1'} = cde + ch. \tag{39''}$$

Estimates of d^2 having the form of equation (42) and based on $r_{X_1'Y_1'}$, $r_{X_2'Y_1'}$, or $r_{X_3'Y_1'}$ will be overestimates if the paths a, b, c, and h are all positive. Thus these three estimates would diverge from the other six in the same direction but not necessarily to the same degree.

We have now defined two types of consistency criteria for three-indicator models. The first consists of a set of nine equations of the form of equation (18) which are analogous to equation (7) for the two-indicator model. Failure of any one of these equations to hold indicates the presence of differential bias of the type illustrated in figure 9A. The second type of consistency criteria for three-indicator models consists of a set of nine estimates of d^2 having the form of equation (42). The failure of all of these estimates to be equal to each other indicates the presence of differential bias, either of the type represented in figure 9A or in figure 9B. More specifically, the divergence of a single estimate in this set of nine from the remaining estimates indicates the presence of differential bias of the type represented in figure 9A, that is, extraneous common variance between one indicator of X and one indicator of Y. The divergence (not necessarily equal divergence) of three of these estimates of d^2, each of which is based on a single Y indicator, would indicate the presence of differential bias of the type represented in figure 9B if the consistency-criterion equations of the form of equation (18) were all satisfied but would indicate the type of differential bias suggested by figure 9C if the consistency-criterion equations involving Y_1' were not satisfied. The three-indicator model thus allows a test for a type of differential bias not possible with the two-indicator model by introducing an additional consistency criterion, namely, that all nine estimates of d^2 given by equations having the form of equation (42) be identical.

We may go one step further with the three-indicator model. We have been concerned above with differential bias, that is, a source of common variance extraneous to the model between at least one indicator of X and at least one indicator of Y. There is another kind of nonrandom measurement error which can also distort the estimates of the abstract coefficient (d in the model of figure 8). This is a source of common variance between the indicators of the same abstract variable other than their common dependence on that abstract variable. This is illustrated in figure 10. In the model of figure 10, X_1' and X_2' have common variance both because of their common dependence on X and because of their common dependence on W. The correlation $r_{X_1'X_2'}$ will therefore be larger than would be the case without this extraneous common variance, assuming, for simplicity, that all co-

efficients are positive. As a consequence, all estimates of d^2 having the term $r_{X'_1 X'_2}$ in the numerator would be overestimates of d^2, while all estimates having that term in the denominator would be underestimates. The three-indicator model yields twenty-seven estimates of d^2 (i.e., eighteen estimates having the form of equation [20] and an additional nine estimates having the form of equation [42]. Twelve of these estimates have $r_{X'_1 X'_2}$ in the denominators and will be underestimates (assuming a, b, h, and j all positive), three have that term in the numerators and will be overestimates, while the remaining twelve do not include that term and will not be affected. Clearly, different types of nonrandom measurement error will result in different patterns of divergence among the twenty-seven estimates of d^2 given by the three-indicator model and thus allow the pattern of inconsistency among estimates to be used as a clue, not only to the presence of differential bias,
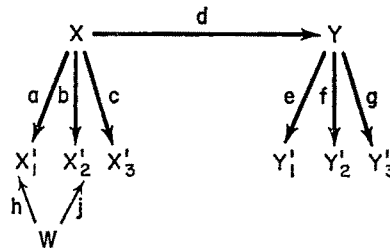

Fig. 10.—Two-variable model with three indicators for each variable and with an extraneous source of common variance between two indicators of the same variable.

but also to the nature of whatever nonrandom measurement error may be operating. Certain complex combinations of different types of nonrandom error, however, would probably defy an attempt to discern the pattern.

In all the above-named consistency conditions for the three-indicator model are satisfied, it will be possible to derive estimates for all the coefficients and to test the implications of the model on the abstract plane in a manner analogous to that represented in equation (17) above.

DISCUSSION

Since the various consistency conditions outlined above are crucial for obtaining unique estimates of the unobservable coefficients in abstract causal models, some brief elaboration of these conditions may be appropriate. The consistency conditions defined here serve to underscore the points made in several insightful discussions of the utility of multiple indicators in testing abstract propositions (Curtis and Jackson 1962; Lazarsfeld 1959; Webb et al. 1966, chap. 1). Let it be noted, however, that the consistency criteria here defined do *not* require that all correlations between different pairs of indicators be identical; rather, the criteria require that certain products of correlations shall be identical or that several estimates of a single abstract coefficient shall be consistent. These criteria may be met even though all observed correlations between X and Y indicators are quite different from

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each other. The expectation that all correlations between different pairs of indicators be identical is unnecessarily restrictive; it assumes, in effect, that all epistemic coefficients between a given abstract variable and its indicators are identical, that is, that all indicators of a given variable are equally good indicators, which is contrary to our common thinking about the uneven quality of indicators.

It may be reasonably asked what is meant when we say that the consistency criterion is satisfied. Do we mean that the two sides of equation (7) are exactly identical, that they are approximately identical, or that they should not differ to a degree that is statistically significant at the commonly utilized levels of significance? If all measures are made on the same set of cases, no variation between the two sides of equation (7) should be attributable to variation between samples of cases, and since random measurement error has been explicitly taken into account in the model, it may appear that such error would not contribute to variation between the two sides of equation (7). While it is true that measurement error has been taken into account in one sense, it has not been taken into account in a way that rules out its effect in producing variation between the two sides of equation (7). In effect, equation (7) asserts the equality of two estimates of the same abstract coefficient, c. But both estimates are subject to sampling variability to the degree that the epistemic coefficients (a, b, d, and e) are less than unity. What we mean, then, when we say that the consistency criterion is satisfied is that the two sides of equation (7) do not differ from each other to a statistically significant degree. This is formally identical to the vanishing of the "tetrad difference" in the classic Spearman factor analysis, and the standard error of the "tetrad difference" is known (Holzinger 1930, p. 6). Satisfying the additional consistency criteria in the three-indicator model presents an additional statistical inference problem, the solution to which does not appear to be found in the factor analysis literature.

If the consistency criterion is satisfied in a particular model or segment of a model, there may be a temptation to interpret it as a validation test for the indicators. The consistency criterion is not a validation of indicators; the absence of differential bias for a given set of indicators in the context of one specific model is no guarantee that differential bias for some of those same indicators will be absent in the context of a different model—or even in another segment of the same complex model. The satisfaction of the consistency criterion is a feature of the model or a segment thereof; it is not a feature of the indicators themselves that can be transferred with them to other models.

The general conclusion to be reached from this discussion is that, although causal models are strictly untestable with a single indicator for each abstract variable unless one assumes very slight measurement error, an auxiliary theory providing multiple indicators for each of the abstract variables will, assuming the consistency criteria are met, allow a test of the implications of the abstract causal model and provide, in addition, estimates of the epistemic coefficients involved in the auxiliary theory itself.

A crucial matter in the whole enterprise, however, is the satisfaction of the consistency criteria as a guard against differential bias, and we may find that certain causal models are simply not testable with certain indicators because differential bias is present.

The general strategy of devising and utilizing auxiliary theories that has been outlined in this paper, with the crucial role it assigns to the inter-correlation between different indicators of a single abstract variable, is probably inappropriate as a guide for dealing with formulations at the highest levels of abstraction. The ties between very highly abstract concepts and the empirical world appear to take a form that is different from that assumed in this discussion. Specifically, highly abstract concepts are frequently designed to encompass a variety of different forms of a given phenomenon that are not necessarily intercorrelated with each other. There is no reason to assume a priori, for example, that all of the many forms of deviant behavior are intercorrelated. Similarly, frustrations are many and varied, and the degree to which one suffers frustration in one guise is no clue to the degree of frustration of another kind. The admission of uncorrelated indicators for a given abstract variable renders the strategy discussed in this paper inapplicable. The problems associated with detailing the connections between such highly abstract concepts, their uncorrelated subforms, and the indicators of each subform—and doing so in a way that allows an unambiguous empirical test of the theory at the highest level of abstraction—will undoubtedly require a more complex and intricate kind of auxiliary theory than the relatively simple type employed in the present discussion. Some progress toward the development of these more complex and intricate auxiliary theories would help provide a needed integration of high levels of abstraction and testable deductions in sociological theory.

REFERENCES

Blalock, Hubert M., Jr. 1961. *Causal Inferences in Nonexperimental Research.* Chapel Hill: University of North Carolina Press.
———. 1968. "The Measurement Problem: A Gap between the Languages of Theory and Research." In *Methodology in Social Research,* edited by H. M. Blalock and A. Blalock. New York: McGraw-Hill.
Curtis, Richard F., and Elton F. Jackson. 1962. "Multiple Indicators in Survey Research." *American Journal of Sociology* 68 (September):195–204.
Fisher, Franklin M. 1966. *The Identification Problem in Econometrics.* New York: McGraw-Hill.
Holzinger, Karl John. 1930. *Statistical Resume of the Spearman Two-Factor Theory.* Chicago: University of Chicago Press.
Lazarsfeld, Paul F. 1959. "Problems in Methodology." In *Sociology Today: Problems and Prospects,* edited by R. K. Merton et al. New York: Basic Books.
Siegel, Paul M., and Robert W. Hodge. 1968. "A Causal Approach to the Study of Measurement Error." In *Methodology in Social Research,* edited by H. M. Blalock and A. Blalock. New York: McGraw-Hill.
Simon, Herbert A. 1959. "Spurious Correlation: A Causal Interpretation." In *Models of Man,* Herbert A. Simon. New York: Wiley.
Webb, Eugene T., Donald T. Campbell, Richard D. Schwartz, and Lee Sechrest. 1966. *Unobtrusive Measures: Nonreactive Research in the Social Sciences.* Chicago: Rand McNally.

Multiple Indicators and the Causal Approach to Measurement Error[1]

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Since the practical utility of the kind of multiple indicators approach discussed in Costner's paper depends on the ways it can be broadened to include a diversity of causal situations, the purpose of the present paper is to extend the argument in three respects: (1) to show that it holds generally in any recursive system; (2) to note the circumstances under which a single indicator of one or more of the variables can be used; and (3) to point out that the use of multiple indicators can be combined with an instrumental-variables approach that has been discussed in the econometrics literature.

Costner has focused primarily on the very simple case where X causes Y. He has also shown that the procedure works in the case of a simple three-variable chain where $X \rightarrow Y \rightarrow Z$, but the practical value of the procedure obviously depends on its generalizability beyond these very simple situations. We shall see that it also works in the case of the general (linear additive) recursive system.

In a recursive system we can arrange the variables in such a way that the first may be a cause of all the rest, the second the cause of any variable except the first, and so forth. Most commonly, a recursive system would imply one-way causation, although it may also be used to handle reciprocal causation provided that some of the variables can be appropriately lagged.[2] Without loss of generality, we may consider the case of one-way causation. In more complex systems, where there is reciprocal causation and where lagged relationships cannot be assumed, ordinary least squares should not be used.

In extending Costner's argument to the more general recursive model it will be convenient to use the theory of path analysis, though I shall retain the notation in which all path coefficients are labeled as a, b, c ... k. I shall confine my remarks to the case where we may assume random measurement errors, since there are too many combinations involving possible nonrandom errors. The notion of "random measurement error" can be conceived in terms of measurement errors produced by numerous minor causes that are not systematically related to each other, but it can also be pinned down more precisely by the assumption that the aggregate effect

[2] For discussions of recursive equations used in dynamic models involving lagged variables and reciprocal causation, see Herman Wold and Lars Jureen (1953, chaps. 2 and 3) and Robert H. Strotz and Herman Wold (1960, pp. 417–27).

of the residual causes of an indicator produces a residual term which is uncorrelated with the comparable terms for all other indicators. For example, if we write an equation for the ith indicator of X as $X_i' = k_i X + e_i$, then we are assuming that the e_i for all indicators of X are uncorrelated with each other, as well as with the comparable residuals for the indicators of the remaining variables in the system. In terms of path diagrams, this would mean that there are no arrows directly connecting the indicators to each other.

As long as we are dealing with random measurement errors, each of the path coefficients (e.g., a, b, d, and e in Costner's figure 4) linking an unmeasured variable to one of its indicators will be a correlation coefficient, but this will not in general be true in the case of the coefficients connecting the various unmeasured variables. While the reader should be able to follow the basic argument without a detailed knowledge of path analysis, I shall assume that some of the basic principles are reasonably well understood.[3]
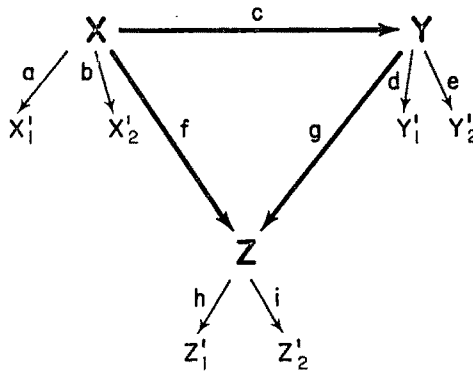

Fig. 1

The feature of path analysis that I shall use throughout this paper is that one may write a total correlation between any two variables as a simple function of the path coefficients that connect these variables. Simple algorithms for tracing paths may be used in these models without risk of being misled, though in general it is preferable to write out each relationship in terms of a set of simultaneous equations to be solved for the path coefficients.[4] The algorithm we shall use is that in tracing the paths connecting two variables it is permissible to move forward (in the direction of the arrow) or backward, or backward and then forward, but not to move forward and then backward. Examples of the use of this algorithm will be introduced as we proceed.

Let us first consider the three-variable model represented in figure 1. For simplicity, we shall confine our attention to situations where there are

[3] For discussions of path analysis applied to sociology see O. Dudley Duncan (1966); Raymond Boudon (1968, chap. 6); and Kenneth C. Land (1969, chap. 1).

[4] For an explanation of this procedure, see Boudon (1968, chap. 6).

exactly two indicators of each variable since additional indicators will merely provide additional test equations. It is an important feature of recursive systems that any variable that is clearly dependent on two (or more) variables may be ignored in studying the relationship between these variables. Therefore Z may be ignored in studying the relationship between X and Y, and thus the situation involving these two variables is exactly the same (including notation) as in Costner's figure 4. We can therefore confine our attention to the relationships between X and Z and between Y and Z.

Looking first at the relationship between X and Z, we may write the correlation between X_1' and Z_1' as the sum of two separate paths, the first being afh and the second being the indirect path through Y, namely $acgh$. Since a and h (the two measurement-error paths) are common to both of these longer paths we may factor them out, obtaining the expression $ah(f + cg)$. If we do the same for the other combinations of X_i' and Z_i' we get the following results:

$$r_{X_1'X_2'} = ab \qquad r_{X_1'Z_2'} = ai(f + cg)$$

$$r_{Z_1'Z_2'} = hi \qquad r_{X_2'Z_1'} = bh(f + cg)$$

$$r_{X_1'Z_1'} = ah(f + cg) \qquad r_{X_2'Z_2'} = bi(f + cg).$$

The compound path represented by $f + cg$ appears in each of the pairings involving an X_i and Z_i and can be shown by the method of path analysis to equal r_{XZ} which, although not directly given, can be estimated in a straightforward manner. We form the products

$$r_{X_1'Z_1'}r_{X_2'Z_2'} \quad \text{and} \quad r_{X_1'Z_2'}r_{X_2'Z_1'}$$

and note that they should both equal $abhi(f + cg)^2 = abhir^2_{XZ}$. This predicted relationship again provides a test of the random error assumption, and we may estimate r^2_{XZ} by dividing either of these products (or their average) by

$$r_{X_1'X_2'}r_{Z_1'Z_2'} = abhi.$$

Turning to the relationship between Y and Z we see that a similar result holds. If we correlate Y_1' with Z_1' the result can be expressed as the sum of the two paths dgh and $dcfh$, the latter indirect path involving our tracing backward from Y_1' to Y to X and then forward to Z and Z_1'. This compound path can also be factored into $dh(g + cf)$ and similarly for the remaining combinations. We thus get the following:

$$r_{Y_1'Y_2'} = de \qquad r_{Y_1'Z_2'} = di(g + cf) = dir_{YZ}$$

$$r_{Z_1'Z_2'} = hi \qquad r_{Y_2'Z_1'} = eh(g + cf) = ehr_{YZ}$$

$$r_{Y_1'Z_1'} = dh(g + cf) = dhr_{YZ} \qquad r_{Y_2'Z_2'} = ei(g + cf) = eir_{YZ}.$$

We see that we can again obtain both a test for randomness of the measurement error and an estimate of r^2_{YZ}. All of the various measurement error paths can likewise be estimated.

The extension to additional variables is straightforward, as can be illustrated with the four-variable model of figure 2. Since W is dependent on each of the other variables, we may ignore it in estimating all of the paths involving X, Y, and Z. We then focus on the relationships of each of these variables with W. We can see how the procedure works by confining our attention to X and W, since the pairings of Y and Z with W involve similar processes of tracing paths. There are four paths connecting X'_1 and W'_1, one
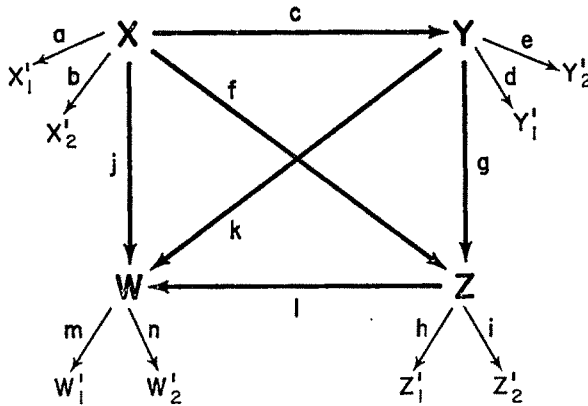

FIG. 2

being via the direct link between X and W, two being through a single intervening variable, and the last involving the three-step path from X to Y, from Y to Z, and from Z to W. Thus

$$r_{X'_1 W'_1} = am(j + ck + fl + cgl) = amr_{XW}$$

and similarly

$$r_{X'_1 W'_2} = anr_{XW}$$

$$r_{X'_2 W'_1} = bmr_{XW}$$

$$r_{X'_2 W'_2} = bnr_{XW} \; ,$$

and therefore

$$r_{X'_1 W'_1} r_{X'_2 W'_2} = r_{X'_1 W'_2} r_{X'_2 W'_1} = abmnr^2_{XW} \; .$$

This procedure can obviously be extended to any number of recursively related variables.

THE USE OF SINGLE MEASURES

Every variable in the models we have thus far considered has been measured by at least two indicators. Are there any conditions under which a single measure may be used to represent one (or more) of the variables? We shall see that in very special circumstances a single estimator may be used, provided one is willing to make rather strong a priori assumptions about the model. Let us consider the model of figure 3 in which the intervening variable Y has been measured by the single indicator Y_1'. The remaining paths have been designated as in figure 1, with the dashed arrow between X and Z indicating that we shall want to consider the special case where $f = 0$, that is, where there is no direct link between X and Z.
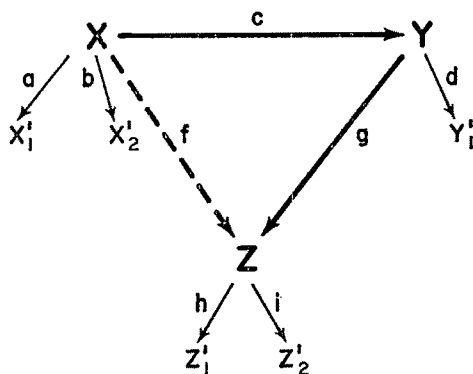

FIG. 3

Since Y_2' and e have been removed from the model of figure 1, we are more restricted in the relationships we can use. However, in considering the relationship between X and Y we have

$$r_{X_1'Y_1'}r_{X_2'Y_1'} = r_{X_1'X_2'}(cd)^2$$

and therefore

$$(cd)^2 = \frac{r_{X_1'Y_1'}r_{X_2'Y_1'}}{r_{X_1'X_2'}}.$$

From this relationship alone we cannot disentangle c and d, the total path connecting X to Y_1'. But we may combine this result with a similar one obtained in relating Y_1' to the two indicators of Z. We have

$$r_{Y_1'Z_1'}r_{Y_1'Z_2'} = hi(dg)^2 = r_{Z_1'Z_2'}(dg)^2$$

and therefore

$$(dg)^2 = \frac{r_{Y_1'Z_1'}r_{Y_1'Z_2'}}{r_{Z_1'Z_2'}}.$$

We may now eliminate d, the coefficient for the measurement error in Y, by dividing one of these expressions by the other. We thus obtain an expression for the *ratio* of c to g as follows:

$$(c/g)^2 = \frac{r_{X_1'Y_1'}r_{X_2'Y_1'}r_{Z_1'Z_2'}}{r_{X_1'X_2'}r_{Y_1'Z_1'}r_{Y_1'Z_2'}}.$$

Next consider the paths between X and Z as represented by the compound expression $f + cg$. We see that if there were no direct link between X and Z, so that $f = 0$, we would be in a position to obtain an expression for the *product* cg, which together with the above expression for their ratio would make it possible to solve for either of them separately. If in fact $f = 0$, it would be possible to treat Y as a completely unmeasured intervening variable, with the result that

$$(cg)^2 = \frac{r_{X_1'Z_1'}r_{X_2'Z_2'}}{r_{X_1'X_2'}r_{Z_1'Z_2'}}.$$

This expression can be obtained by merely replacing Z for Y in the model of Costner's figure 4. Had the direct link between X and Z not been zero, it would have been necessary to use the *compound* path $f + cg$ instead of the simple product cg. This would have meant that the presence of f in the expression would have made it impossible to solve for either c or g. With f set equal to zero, however, we may take the product of the (squared) ratio of c to g and that of their (squared) product, obtaining the following result:

$$c^4 = (c/g)^2(cg)^2 = \frac{r_{X_1'Y_1'}r_{X_2'Y_1'}r_{X_1'Z_1'}r_{X_2'Z_2'}}{r^2_{X_1'X_2'}r_{Y_1'Z_1'}r_{Y_1'Z_2'}}$$

and similarly

$$g^4 = \frac{(cg)^2}{(c/g)^2} = \frac{r_{Y_1'Z_1'}r_{Y_1'Z_2'}r_{X_1'Z_1'}r_{X_2'Z_2'}}{r^2_{Z_1'Z_2'}r_{X_1'Y_1'}r_{X_2'Y_1'}}.$$

These results are of course highly complex and very much subject to the vagaries of sampling error. Furthermore, we have had to make the assumption that $f = 0$. This amounts to assuming that Y is the *only* intervening link between X and Z. Since we are allowing for the possibility of measurement error in Y, this particular assumption cannot be tested by the simple device of computing $r_{XZ \cdot Y}$. With random measurement error in Y, this partial cannot be expected to vanish, and we will not be in a position to decide the degree to which the nonvanishing partial was due to measurement error or to the existence of f. Therefore we have to rely completely on the a priori assumption that $f = 0$.

It can similarly be shown that if we had two measures for both X and Y but a single measure for Z, it would *not* have been possible to separate the component paths by any such simplifying assumptions. In particular, the

paths g and h would always be found together as a product, so that the device of multiplying a product by a ratio could not be used. The same holds if X had been measured by a single indicator, with Y and Z having two measures each. It therefore appears as though the only relatively simple kind of model for which a single indicator may be used is one in which the single indicator is linked with an intervening variable in a simple causal chain of the form $X \rightarrow Y \rightarrow Z$. There may possibly be other kinds of situations where a single indicator may be used, but I have been unable to determine what these are.

THE INSTRUMENTAL-VARIABLES APPROACH

Costner has noted that this kind of multiple-indicator approach presupposes a relatively simple auxiliary theory in which all indicators are taken as effects of the unmeasured variables. If, in fact, there are a large number of unknown factors affecting the intercorrelations among the indicators, then it will be difficult to know how to proceed. In addition, it may not be possible to collect data in such a way that there are multiple indicators for *all* of the variables of theoretical interest. As we have just seen, it appears to be true that solutions can be found only in the case of very simple kinds of models (e.g., simple chains) in such instances. It would therefore appear as though the procedure has major limitations in many practical situations of interest to sociologists.

It would seem possible, however, to combine this kind of multiple-indicators approach with other statistical procedures which utilize somewhat different principles, but which also require the explicit formulation of causal models. One such approach that has been discussed in the econometrics literature involves what are called "instrumental variables."[5] Although this approach will be discussed in more detail elsewhere, I can at least indicate the basic ideas which are quite simple. Let us suppose that we are assuming that X causes Y, that X has been measured with random error, and that Y is either perfectly measured or has been measured with random error. If we can now find one or more instrumental variables Z_i which are assumed to be causes of X but which do not appear in the equation for Y (though they will of course be *indirect* causes of Y through X), then we may form a number of instrumental-variable estimators b^*_{YX} by taking ratios of the *covariances* of Y and X with the Z_i.

For example, suppose X is educational discrimination, which we are assuming to be a direct cause of educational inequalities Y. We might have only a single imperfect indicator X' of discrimination. But if we can find a variable Z, say minority percentage, that we are willing to assume affects X but not Y (except through X), we can then write down the pair of equations

$$Y = a_1 + \beta_1 X + \epsilon_Y$$

$$X = a_2 + \beta_2 Z + \epsilon_X$$

[5] For discussions of this approach see Carl Christ (1966, pp. 404–10); Arthur S. Goldberger (1964, pp. 284–87 and 331–33;) and J. Johnston (1963, pp. 165–66).

where it is necessary to assume that Z does *not* appear in the equation for Y. If we used the ordinary least-squares estimator $b_{YX'}$, replacing X by its measured value X', we would obtain a biased estimate of β_1. But we can form the instrumental-variable estimate b^*_{YX} by taking a ratio of the co-variance of Y and Z to the covariance of X' and Z:

$$\overset{*}{b}_{YX} = \frac{\Sigma yz}{\Sigma x'z}$$

where the lower case letters refer to deviations around the respective means. It turns out that since covariances are not systematically affected by random measurement errors, the instrumental-variable estimate is a *consistent* estimator of β_1. This means that it has a bias that approaches zero as sample size increases.
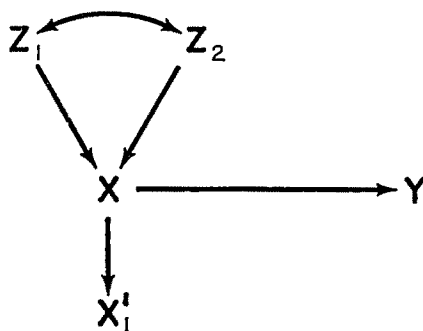

FIG. 4

In the model of figure 4, in which Z_1 and Z_2 both affect X, we would have

$$\overset{*}{b}_{YX}^{(1)} = \frac{\Sigma yz_1}{\Sigma x'_1 z_1} \quad \text{and} \quad \overset{*}{b}_{YX}^{(2)} = \frac{\Sigma yz_2}{\Sigma x'_1 z_2}$$

where X'_1 again refers to the first measured value of X. Had there been an additional measure of X, namely X'_2, also assumed to involve only random measurement error, then we could have obtained two further estimates. If the assumptions of the model were in fact correct, these various instrumental-variable estimators would all be approximately equal, subject of course to sampling error.[6] Furthermore, the estimators produced by the instrumental-variable method should be approximately equal to those obtained using the multiple-indicator approach. Whenever the various estimators yield widely different results it should then be possible to postulate alternative models to account for these differences.

The instrumental-variable approach can also be easily generalized to the

[6] The instrumental-variable approach also works if there are random measurement errors in the Z_i but is generally more sensitive to specification errors (i.e., errors in the equations) than is ordinary least squares.

multivariate case, and has in fact has been used principally as a technique for estimating parameters in simultaneous-equation systems involving reciprocal causation.[7] The possibility of combining this approach with that of multiple indicators opens up such a wide variety of models that it will probably be difficult to state very many general principles that can be routinely applied to specific situations. Once the basic ideas of each approach have become generally familiar, however, it should become possible to apply them in various combinations to a wide variety of causal models.[8] In attempting to do so, sociologists will undoubtedly become sensitized to the implications of measurement errors for making causal inferences. At the very least, this should increase our motivation to improve measurement at the data *collection* stage of the research process, so that simplications concerning the nature and extent of measurement error may become increasingly realistic.

REFERENCES

Boudon, Raymond. 1968. "A New Look at Correlation Analysis." In *Methodology in Social Research*, edited by H. M. Blalock and Ann B. Blalock. New York: McGraw-Hill.
Christ, Carl. 1966. *Econometric Models and Methods*. New York: Wiley.
Duncan, Otis Dudley. 1966. "Path Analysis: Sociological Examples." *American Journal of Sociology* 72 (1):1–16.
Goldberger, Arthur S. 1964. *Econometric Theory*. New York: Wiley.
Heise, David R. 1969. "Separating Reliability and Stability in Test-Retest Correlation." *American Sociological Review* 34 (February):93–101.
Johnston, J. 1963. *Econometric Methods*. New York: McGraw-Hill.
Land, Kenneth C. 1969. "Principles of Path Analysis." In *Sociological Methodology*, edited by Edgar F. Borgatta and George W. Bohrnstedt. San Francisco: Jossey-Bass.
Strotz, Robert H., and Herman Wold. 1960. "Recursive versus Nonrecursive Systems: An Attempt at Synthesis." *Econometrica* 28 (April):417–27.
Wold, Herman, and Lars Jureen. 1953. *Demand Analysis*. New York: Wiley.

[7] The general formula for the matrix B^* of instrumental-variables estimators is $B^* = (Z'X)^{-1}Z'Y$, which may be compared with the matrix equation for B, the matrix representing the least-squares regression estimators. This latter formula is $B = (X'X)^{-1}X'Y$. It can be seen that these matrix formulas differ only in that the matrix Z' replaces the matrix X' in the least-squares formula.

[8] A third approach, which seems to be basically similar to the multiple indicator approach and which involves assessing measurement error from observations at three or more points in time, has recently been introduced by Heise (1969).

COSTNER COMMENTS ON BLALOCK

I am grateful to Professor Blalock for showing that the argument of my paper holds in recursive systems generally and therefore that it is not limited to the illustrative causal models that I have discussed. The primary focus of my paper is on causal models that are overidentified so that the assumptions of the model may be tested by the consistency of the estimates derived. It is reassuring, however, to find that the procedure for minimizing the disturbances of measurement error in this restricted class of models is more broadly applicable.

The alternative procedures that Blalock suggests for resolving measurement error problems will undoubtedly prove useful in working on many problems. It should, however, be noted that solutions utilizing single indicators for one or more variables in the model require the a priori assumption of what is often problematic, that is, the assumption that the causal structure is a simple chain as illustrated by the assumption that $f = 0$ in Blalock's figure 3. With single indicators for some variables, there is no consistency-of-estimate test for this assumption. The instrumental variables approach is subject to the same kind of limitation; that is, it is necessary to assume a priori that the coefficient for the direct path from the instrumental variables to the dependent variable is zero, and it is often assertions of this type that need to be tested rather than assumed. In general, overidentified models—that is, those which yield more than one estimate for the same path coefficient—permit a test of the model; models which lead to inconsistent estimates are untenable. On the other hand, exactly identified models—that is, those which yield exactly one estimate for each path coefficient—permit the estimation of numerical coefficients but provide no test of the model. Knowledge of the numerical values of the coefficients may be useful in estimating quantitatively the consequences of a given change in a complex system, or in comparing quantitatively the the impact of one variable on another in differing contexts assumed to share the same basic pattern of causal relations, for example, certain cross-national comparisons. But the computed values derived from exactly identified models provide no consistency-of-estimate test of the model; rather, the basic pattern of causal relations is assumed to be known.

The techniques described in my paper will be most useful to investigators who are inclined to take neither the basic theoretical model nor the adequacy of the indicators for granted, since the models I have discussed provide a separate consistency-of-estimate test for the measurement model and, in the three variable models discussed, for the underlying causal model. The techniques based on single indicators and the instrumental variables approach, on the other hand, will be more useful to investigators who are either more confident of their knowledge base or more daring in making assumptions about the nature of underlying causal patterns.

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Commentary and Debate

ON ADAMS AND MEIDAM'S "ECONOMICS, FAMILY STRUCTURE, AND COLLEGE ATTENDANCE"

There are three major sections in the paper by Bert N. Adams and Miles T. Meidam ("Economics, Family Structure, and College Attendance," *American Journal of Sociology* 74 [November 1968]:230–39) which require comment. A brief quote and discussion are presented for the sections delineating (*a*) the assumptions underlying the research problem, (*b*) the relationship between the research findings and other appropriate literature, and (*c*) the theoretical framework in which the results can be interpreted.

The analyses presented in the paper are based on an undocumented and ambiguously phrased assumption posed in the prefatory remarks: "Intelligence has been found to have an effect independent of economics, the less intelligent being less likely to attend college. However, this effect is randomly distributed *within* socioeconomic status and family structural categories. We, therefore, suggest that family economics and economic values ... account in large measure for variations in college attendance by SES and family structure" (p. 230). It is not entirely clear that the assumption is that the *effect* of intelligence on educational aspirations or outcomes is "randomly distributed *within* socioeconomic status." If that is the assumption, it is simply not supported by any data with which I am familiar. Indeed, there is a strong interaction effect of the two variables on college outcomes. The data from the national longitudinal study of Project TALENT show that in low SES groups those in the highest-ability quartile are from five to eight times as likely to attend college as are those in the lowest-ability quartile, while in the high SES groups those in the highest-ability quartile are only three to four times as likely to attend college as their low-ability cohorts (Schoenfeldt 1966). Other analyses from Project TALENT (Folger et al. 1969), as well as the Wisconsin follow-up studies (Sewell and Shah 1967), have shown similar results and have also demonstrated that from one-half to two-thirds of the observed effect of SES on educational outcome is actually due to IQ differences. These differences cannot be entirely explained by *between* SES differences, nor can the effect of IQ be considered inconsequential *within* SES categories. To study the effects of economic factors, particularly with a dichotomous measure of occupational position as a proxy, one cannot disregard the confounding influence of ability. The consequences of dismissing this variable in the analyses by Adams and Meidam may seriously affect the conclusions of their study. However, I first want to examine their discussion of the relationship between their findings and those of others also reporting relationships between family structural variables and educational outcomes.

The authors have selected one of my papers as a primary focus for comparison with their results. Their major rationale for differences in the results is: "Bayer did not separate birth-order positions while controlling for sibship size, as he claimed. ... Bayer's findings regarding intermediate

children are largely a function of his categorical divisions and tabular structure, which obscure sibship size effects" (pp. 237–38). This explanation for the discrepancy in the results between my study and that of Adams and Meidam is patently in error. While only the summary table collapsing across family sizes was presented, it was explicitly stated in my article that family size was indeed controlled in the analyses and in the reporting of results (Bayer 1966). When Hermalin (1967) made precisely the same criticism of my article, I subsequently presented the tabular data by SES, ordinal position, and *family size*. Inasmuch as Adams and Meidam cite this reference in their footnote 15, it is especially puzzling that they persist in their assertion. Although their second explanation (the possible effect of limiting my analyses to high school seniors) is perhaps tenable, a more likely explanation for the discrepancy between their results and mine is that their research design included the assessment of actual siblings. This "ideal" design was suggested in my recent *AJS* article as a primary requirement for further birth-order research (Bayer 1967a), and its use by Adams and Meidam lends credence to their results, if not to their conclusions.

The summary of their conclusions follows: "Family size, sex ratio, and child-space effects are all difficult to explain in a framework other than an economic one. The foregoing argument, which our data support, does not invalidate physiological or socialization hypotheses for explaining some aspects of human behavior and personality, but it does call into question these other orientations in explaining family structural variations in college attendance in American society" (p. 239). Adams and Meidam's results are no more difficult to explain by means of the physiological or socialization hypotheses than by the economic interpretations that they favor. The socialization hypothesis can, for example, be readily employed to explain why the sex-ratio effect on college attendance is observed for blue-collar but not white-collar females. The traditional definition of the woman's role may still exist primarily in the value systems of low SES groups. It may not be an inability to finance education which limits college attendance by blue-collar girls, but simply the expectation that a woman is to marry by, say, age 18 or 20, her defined adult role being entirely that of a wife and mother.

The physiological hypothesis could be easily advanced to explain the finding that greater child spacing increases the likelihood of college attendance by the later born within a sibship. Specifically, with increasing time between births it might be hypothesized that the mother has time to replenish the nourishing materials essential for the optimal development of fetal mental physiology. The social-psychological hypothesis might also be employed to explain these same results: a later child in a widely spaced sibship may be likely to receive treatment similar to that of a first-born or previously born sibling, thus developing similar levels of need achievement, aggressiveness, independence, or other traits resulting from socialization processes which may be conducive to the general outcome of similar levels of educational attainment between siblings.

The promise of further research by Adams and Meidam, which will include a larger, more representative sample and incorporate direct questions regarding the reasons for achieving a given level of education, may well allow more compelling conclusions and explanations with regard to the mechanisms which link family structural variables to educational outcomes. It is also hoped, however, that a less crude measure of socioeconomic background will be employed and that measures of ability will be incorporated into their research design. Without such refinements, the conclusions will continue to reflect only simple speculation which, when framed by restricted economic interpretations, perpetuates the folktale that financial aid is a panacea for the country's educational ills and manpower requirements.

ALAN E. BAYER

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REFERENCES

Bayer, Alan E. 1966. "Birth Order and College Attendance." *Journal of Marriage and the Family* 28 (November):480–84.
———. 1967a. "Birth Order and Attainment of the Doctorate: A Test of Economic Hypotheses." *American Journal of Sociology* 72 (March):540–50.
———. 1967b. "Reply to Mr. Hermalin." *Journal of Marriage and the Family* 29 (August):422–23.
Folger, John K., Helen S. Astin, and Alan E. Bayer. 1969. *Human Resources and Higher Education.* New York: Russell Sage.
Hermalin, Albert I. 1967. "Birth Order and College Attendance: A Comment." *Journal of Marriage and the Family* 29 (August):417–21.
Schoenfeldt, Lyle F. 1966. Post–High School Education." In *Project TALENT One-Year Follow-up Studies,* edited by John C. Flanagan and William W. Cooley, Cooperative Research Project no. 2333. Pittsburgh: University of Pittsburgh Press.
Sewell, William H., and Vimal P. Shah. 1967. "Socioeconomic Status, Intelligence, and the Attainment of Higher Education." *Sociology of Education* 40 (Winger):1–23.

THE AUTHORS REPLY

Alan Bayer's response to our paper on college attendance continues the task of focusing the issues regarding who goes to college and why. His comments include three elements: first, points upon which his earlier results and our results differ; second, points upon which we are talking past each other or else where he exaggerates our differences; third, points where we were in error.

Bayer notes the discrepancy between his finding of an advantage for first- and lastborns and our finding of no birth-order effect, and he—as we did—puzzles over it. He feels that our use of actual siblings may be key, but he does not indicate why. If this is in fact the best explanation, the reason may well lie in the demographic and cohort arguments with which we criticized Schachter's (1963) work. That is, when the researcher draws a cross-sectional sample, he includes one or at most two members of any given family. Firstborns among high school seniors have parents who are

an average of several years younger than those of lastborns, though the respondents' own ages are identical. Thus, the firstborns have the advantage of the more favorable attitude of younger parents toward education. On the other hand, the youngests in the same sample have the advantage of the gradual economic betterment which occurs within the careers of most family units. With a large sample such as Bayer's, these two effects crisscross or interact, resulting in a slight advantage for oldests and youngests. If this result is correct, a sample of whole families should effectively dispel the influence of differential educational values among different-age parents, leaving only the incremental economic effect favoring later-borns. It should be reported that in our current study, which includes all offspring from 585 whole families, precisely this effect appears, with the oldest male *least* likely and the youngest male *most* likely to attend college, regardless of SES or family size.

There are several points upon which Bayer and we are either talking past each other or where he exaggerates our differences. (1) Bayer somehow assumes that our comment regarding intelligence being distributed randomly with SES and family structural categories has been proved incorrect by Project TALENT and Sewell's work. Such findings, however, deal only with SES, not with family structure, and thus cannot be used to invalidate our assumption. (2) For some reason Bayer wants to set up the socialization and physiological theories as alternatives to our argument regarding economics. To do this he writes as if we had treated economics in a vacuum. For example, he says that our sex-ratio effect may simply be based on the traditional definition of women's roles operating "in the value systems of only low SES groups." Yet throughout we speak of economics (or available resources) and economic *values*, or the family values which determine the allocation of these resources. Furthermore, his notion of traditional role values cannot be used to account for the sex-ratio effect but only for the low numbers of blue-collar females attending college. That is, according to his argument a female with two sisters should be as unlikely to attend college as one with two brothers, which is incorrect. (3) Finally, his exaggeration of our differences is most evident in his treatment of the economic variable itself. In his own earlier article (Bayer 1967, p. 549) he noted that "parents do bear the major responsibility for financing undergraduate educations." Thus, allocation of resources must be a part of the explanatory pattern. He also arrives somehow at the conclusion that we are "perpetuating the folklore that financial aid is a panacea for the country's educational ills and manpower requirements." Our own conclusion is that economics—in the broad sense that we employ throughout the paper—is a determinant of educational chances "within which other factors, such as motivation and intelligence, operate." We do not feel that Bayer really means to state the case as either/or with respect to economics and economic values versus other possible explanations, but that is precisely the way his comments come across.

Finally, we must admit with embarrassment that we simply overlooked his own table, in response to Hermalin, in which he observed birth-order

effects while controlling for SES *and family size*. This was a most un-
fortunate oversight.

It is our hope that this sort of dialogue will not be an end in itself but
will result in continued effort to go beyond correlations and relationships
to an explanation of educational opportunity in the United States.

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REFERENCES

Bayer, Alan. 1967. "Birth Order and Attainment of the Doctorate: A Test of Economic
   Hypotheses." *American Journal of Sociology* 72 (March):540–50.
Schachter, Stanley. 1963. "Birth Order, Eminence, and Higher Education." *American
   Sociological Review* 28 (October):757–68.

TWO COMMENTS ON GUTTMAN SCALING

I

If the suggestions made by Schooler (1968) were implemented, an ac-
ceptable Guttman scale would not necessarily emerge. The primary cri-
terion of "acceptability" must be theoretical, not statistical. Tests of
reliability and validity must be utilized. That such tests will be developed
and applied is unlikely, because scalogram analysis continues to be used
primarily for heuristic purposes—"I wonder if I have anything here?"

Stephenson's work (1968) raises the issues of validity and reliability, and
even publishes the items which did not scale so that the reader himself can
wrestle with these "leftovers" which were seemingly part of the same uni-
dimensional conceptual pool. Validation of his scale, and most others, rests
on face validity, hardly a satisfactory criterion. The reader is asked to
empathize with the measure. This is not to slight Stephenson's work, but
merely reflects the present state of measurement in this area. It is difficult
to find external validators and difficult to test and retest measures; these
problems are amplified in the case of macrovariables such as modernism and
modernization. Is education an external validator, part of the same dimen-
sion, or a completely distinct variable which may be related causally to
modernism? This question cannot be answered by improved statistical
techniques.

There are technical problems, as Schooler points out, but even here it is
doubtful if his suggestions will offer us much assistance. The basic weak-
ness with his first and third suggestions is that they are applied after the
scale has been constructed; a preferable technique is Goodman's (1959)
which is applied to the conceptual pool. Even if this basic weakness is over-
looked, the suggestions are still not helpful. John D. Campbell's suggestions
(I would have appreciated a reference) for intercorrelations between scale
items overlooks the basic cumulative nature of a Guttman scale; it is highly
unlikely that the most and least discriminating items would intercorrelate

at a significant level. The differences in distribution are too great (for a relevant discussion see Guttman 1953 and Burt 1953). The second suggestion, for the development of a new computer program, appears sounder although scales which I have seen constructed through the use of such programs have been poor. (I believe that both UCLA and the University of Hawaii have such programs.) One problem appears to be that of programming the desirable frequency distribution. I question whether even this criterion is of major importance; it seems to me that the quality of the items and their relationship to the concept being measured are of much greater significance. Frequency distributions carry little theoretical import.

Schooler's third suggestion is that scalogram analysis serves as a test for heterogeneity rather than homogeneity; the choice of terms is bad. Scales which are theoretically unidimensional often contain items which are characterized by their heterogeneity; this is to be expected since the concept being measured is often more abstract than the items contained in the measure. Scales can then be homogeneous or unidimensional at one level while the items remain heterogeneous. Again the basic criterion should be theoretical rather than statistical.

Care must certainly be taken not to produce random scales, but the greatest assurance against these results is more attention to the concepts being measured and to tests of validity and reliability. Revision of statistical concepts is secondary.

REFERENCES

Burt, Cyril. 1953. "Scale Analysis and Factor Analysis." *British Journal of Statistical Psychology* 4, pt. 1 (May):5–23.
Goodman, Leo A. 1959. "Simple Statistical Methods for Scalogram Analysis." *Psychometrika* 24 (March):29–43.
Guttman, Louis. 1953. "A Note on Cyril Burt's 'Factorial Analysis of Qualitative Data.'" *British Journal of Statistical Psychology* 4, pt. 1 (May):1–4.
Schooler, Carmi. 1968. "A Note of Extreme Caution on the Use of Guttman Scales." *American Journal of Sociology* 74 (November):296–303.
Stephenson, John. 1968. "Is Everyone Going Modern?" *American Journal of Sociology* 74 (November):265–75.

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II

After the scathing criticisms which have been leveled at Guttman scaling in recent years, one sometimes wonders why it has not been thrown out of the methodological kit bag altogether. Some, such as Robinson (1968) seem to suggest that the reason is cultural lag: the methodologically unsophisticated will take a while to see the light. This, we argue, is a mistaken view. There is a good reason for employing scale analysis, and the sophisticated would be more sophisticated still if they could only see this.

Schooler (1968) has recently pointed out some of the pitfalls that invalidate conventional scaling as proof of homogeneity. He misses the point in two respects. First, we do not often *prove* anything save in the classical

sense of subjecting it to test. We have accepted the idea that data support rather than prove our theories, and that these theories can be disproven but never confirmed. The philosophical underpinnings of these basic facts of scientific life are understood by some; their practical meaning seems to be generally accepted. We continue to test theories without demanding that only tests which can give proof positive be employed. The same frame of mind is in order for the validation of techniques.

Second, and perhaps more important, Guttman scaling is valuable as evidence of ordinality of measurement whether homogeneity is proven or not. If the validity of a scale is satisfactory from other points of view—be these theoretic or pragmatic—and the scale has a high and statistically significant coefficient of reproducibility and an acceptable coefficient of scalability, it may be taken to be ordinal with more confidence than any "simple additive index" (Robinson 1968) may be taken as ordinal, let alone interval. Occasionally, too, a scale of the "developmental" form (see Leik and Matthews 1968) will be found; suitable values of the appropriate reproducibility and scalability coefficients are empirical evidence of ordinality.

The issue which Schooler neglects most seriously, then, is that of measurement standards. Guttman scaling is not perfect by any means, and no one who has a technique by which he can generate data that logically *must* be ordinal or better in level of measurement should bother with Guttman scaling. But in the absence of something better, it is methodologically conservative to use Guttman scaling as evidence for ordinality rather than to construct an add-'em-up index and use hope as evidence for its assumed level of measurement. There are those (e.g., Labovitz 1967) who argue for the latter policy; for them there would seem to be no excuse for Guttman scaling. Those who are as conservative about their measurement standards as they are about their statistical tests, however, have a good and proper use for the technique.

It is to be hoped that arguments such as this do not serve to impede efforts to find better techniques of measurement in social science. The argument for conservative measurement standards is not an argument against the improvement of methodology.

REFERENCES

Labovitz, Sanford. 1967. "Some Observations on Measurement and Statistics." *Social Forces* 46 (December):151–60.
Leik, Robert K., and Merlyn Matthews. 1968. "A Scale for Developmental Processes." *American Sociological Review* 33 (February):62–75.
Robinson, John P. 1968. "Uses and Abuses of Guttman Scaling." Paper read at the annual meetings of the American Sociological Association in August at Boston, Massachusetts.
Schooler, Carmi. 1968. "A Note of Extreme Caution on the Use of Guttman Scales." *American Journal of Sociology* 74 (November):296–303.

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Errata

In Robert M. Hauser's "Schools and the Stratification Process" 74 (May 1969):587–611, several errors occurred:

P. 589, col. 1, line 17 should read "more or less equality of opportunity . . ."

P. 595, col. 1, line 1 should read ". . . That is, if school interacts . . ."

P. 597, equations (1) and (2) should read

$$M = p_{MX}X + p_{MV}V + p_{MS}S + p_{Ma}U_a \tag{1}$$

and

$$W = p_{WX}X + p_{WV}V + p_{WS}S + p_{Wb}U_b \tag{2}$$

P. 604, equation (11) should read

$$c_j = \sum_k b_{mk}(\bar{x}_{jk} - \bar{x}_k) \tag{11}$$

P. 604, equation (13) should read

$$M = p_{MC}C + p_{MR}R \tag{13}$$

Book Reviews

Economy and Society. By Max Weber. Edited by Guenther Roth and Claus Wittich. 3 vols. New York: Bedminster Press, 1968. Pp. cviii+1469. $40.00.

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Shortly after getting out of graduate school, I put a good deal of effort into reading the untranslated parts of Max Weber's *magnum opus* with my graduate school German, living with the fear that the effort would be wasted because the part I was reading would be translated soon, but with the hope that if it were translated I would at least be sure I had got it straight. Re-reading it now, entirely in my native language and in a continuous fashion, provides an occasion to comment on whether people starting out at this time to be sociologists should start as I did. Is *Economy and Society* a good place to start an intellectual biography now? What is there about this work that is of continuing value to the discipline?

There are clearly some parts of the book that have become archaic. The discussion of meaning at the beginning of the book, for instance, would be written quite differently by a modern scientist of Weber's quality, incorporating the recent advances in cognitive psychology and linguistics. Much of what Weber discusses philosophically has been investigated empirically.

Likewise Weber's treatment of calculation in economic enterprises is oriented to an old-fashioned financial balances calculation rather than to the representation of a causal system with monetary measures of the variables as in modern cost accounting, or to the devices of operations research and linear programming for rational calculation in the case of unpriced inputs or outputs. We know a good deal about rational planning of physical production quantities (rather than market price quantities) from detailed studies of the Soviet system (for instance, the recent brilliant study by David Granick in *Soviet Metal Fabricating*).

Weber's discussion of the direct relation of the state to the economy considers mainly the problem of the creation of money rather than treating the nation as a whole as a "household," as in modern national income theory, with combinations of fiscal and monetary controls.

Weber ignores the impact of the high rate of technical change in the economy on the definition of rationality. If an economy is advancing technically at between two and three percent per year, then technical stagnation will cut a firm's efficiency almost in half in a period of twenty years, as compared with other firms in the economy. Technical stagnation is, therefore, more irrational than almost anything that stupidity, sentimentality, or family ties might lead a businessman to do at any particular time. Keeping up with science and technology is more fundamental to rationality in the economy than Weber's treatment implies. Rationality should not be defined as a quality of decisions at a particular time but rather as a pattern of systematic improvement over time.

These examples of archaisms come mainly from Weber's analysis of the economy because that is what I know most about. I presume that there are similar substantial deficiencies in his analysis of politics, religion, law, or cities. Though the *best* of modern analyses are generally better than Weber

in the details, we could eliminate a lot of tiresome reading by cutting out modern analyses that are substantially worse. But the main value of the work is not in the details—it is in the architecture of the work as a whole.

Talcott Parsons's analysis of the architecture of the work as a whole is, roughly speaking, that the book is mainly about values and their influence on social organization. Reinhard Bendix's analysis is, again roughly, that the book is mainly about domination and authority. My analysis is that it is mainly about economy and society. I think Weber's main contribution was the way he used the model of classical economics to construct a theory of economic progress. Since much of the technique for this architecture is obscured by the brilliance of the detail, I will outline briefly the strategy of theory building I think Weber was using and describe briefly how some of the specific parts of the book relate to this basic structure. This will show why *Economy and Society* is a much better a book on economic development than all but a very few books on that subject written today. In my opinion, only Clifford Geertz sometimes approaches Weber's quality of intellectual construction in this field, and that usually in short spurts.

Each of the sections of the book can be thought of as an attempt to detail a given area of social life. Which organization of that area of life comes closest to being compatible with the growth of rational bourgeois capitalism by most closely satisfying the postulates of classical economic theory? What are the main alternative, nonpropitious forms of organization in that area of life? How do these alternative forms undermine rational calculation and exchange in the economy? In what ways was the development of that area of life different from other approximations to the propitious organization in the western European Middle Ages, Renaissance, and absolutist periods? The last question is important because such differences in the West might explain the growth there of a classical economic reality.

The areas of life to which these questions are applied are: (1) the structure of economic enterprises themselves, especially their accounting mechanisms and their embedding in markets (pt. 1, chap. 2); (2) kinship institutions in relation to the economy, especially the forms of appropriation and inheritance of economic opportunities, with the resulting kin structuring of economic enterprise (pt. 2, chaps. 2, 3, and 4); (3) more or less solidary suprafamilial interest groups, with a common dependence on some kind of economic opportunity or valuable social status, such as social classes, estates, and ethnic groups (pt. 1, chap. 4; and pt. 2, chap. 5; and mixed with political considerations, pt. 2, chaps. 11–16); (4) religious groups, and particularly religious suprafamilial ethical socialization for economic life organized by a society's ethical and religious leaders (pt. 2, chap. 6, and mixed with politics again, chaps. 14 and 15); (5) courts, judges, lawyers, and other structures for resolving civil disputes, especially in their aspect of making economic obligations predictable and calculable (pt. 2, chaps. 1 and 8); (6) the structure of local government and its relation to the central powers of government and also its relation to the military risks and opportunities of the society, with special attention to the government of commercial and manufacturing cities (pt. 2, chap. 16); and finally (7) the institutions for the application and control of violence, and the resulting institutions of taxation, of slavery and other politically enforced labor, of conquest, of public office holding, of politically induced disturbances in the system of civil law and property ownership, and generally other violence-

backed exactions from the economically active population (pt. 1, chap. 3; and pt. 2, chaps. 10–15).

For instance, the kinship institutions of a society facilitate economic rationality (in the limited sense of approximating the situation in which people will act as they are postulated to act in classical economics): (1) if families can own property without political and religious encumbrances and if most economic property is owned without such encumbrances; (2) if other kinds of bodies as well as kin groups can corporately own and control property; (3) if no legal restraints on sales of property in the interests of future heirs exist; (4) if families do not own public offices or places in a craft guild or otherwise have property rights which restrict free mobility of labor; and so forth.

As another instance, the central government is most favorable to economic rationality of a capitalist sort when the conditions under which violence will be used are strictly predictable from rationally organized laws and administrative regulations. Hence, various features of bureaucratic administration that prevent an official from using state power for his own benefit (as he typically does under patrimonial administrative systems) facilitate economic rationality. The first achievement of bureaucratic government, then, is to render lower officials controllable by higher officials. But if these higher officials, in turn, are despots with "irrational" political objectives, official actions are still unpredictable. Lower officials controlled by higher officials, who are controlled, in their turn, by rationally organized law and rational technical training, provide the best governmental situation for satisfying the postulates of the classical economic model of the economy.

The reason we sometimes get lost in a wealth of detail in Weber's treatment of each of these areas of life is that he insists on telling us how some fifteen or twenty major cases look, superficially, like rational-legal bureaucratic authority but, in fact, are not. He then details how these cases work, how they might be grouped into *types* of nonpropitious circumstances, and how the appropriate institutional forms grew up in the late medieval Occident. Sometimes one gets exasperated with being brought almost to the climax of of propitious circumstances for capitalistic rationality only to have some *differentia specifica* turn him aside at the last moment. I still do not really see why the ancient Greeks did not make it, but that is probably because, of all the historical blank spaces in my mind, ancient history is the most massively blank. But at other times Weber is so movingly brilliant, so reorganizes the average sociologist's fragmentary knowledge of intermediate-level ("feudal") societies into meaningful patterns, that the reader loses interest in capitalism and starts wondering what will happen to the lords, ladies, monks, and peasants.

For instance, chapter 15 of part 2 is about the relation between the state and the priesthood and the consequent interpenetration of state administration and religious interests. The separation of church and state and the secularization of law and administration are good for capitalism. So far, we are in the main part of the architecture of the work. But Weber gets carried away with the distinction between caesaropapism (appointment of bishops by the king) and hierocracy (subjection of the king to appointment and confirmation by the priesthood) and its working out in religious and political structures. Many of the differences between English caesaropapist history (after the break with the Roman Church) and, say, French history,

have interesting similarities to the differences between the Eastern Christian caesaropapist empires of medieval times and Western developments. Even if this were not part of a larger architecture, translating this chapter alone might justify producing a forty dollar book.

The chief value of having the entire book in English is, I think, that it allows us to suppress our inclination to get caught up in the cornucopia of alternative forms, sometimes brilliantly outlined in a chapter. When we suppress that inclination, we see that the book is a detailed statement of the conditions under which the classical model of the economy works. It is therefore a statement, in general theoretical terms, of the specific social phenomena to which the discipline of economics as we know it applies. I think that it is a correct statement for the most part. Most of the criticisms made of Weber's economic sociology are irrelevant to the main problem because the architecture of the work has not been understood: the critics have perhaps reshaped the noses of some of the decorative gargoyles on the edifice.

The annotations to different parts of the book were done by different people. This gives us the opportunity to compare types of rationalization of scholarship. Max Rheinstein, who annotated the section on the sociology of law, is clearly a mind of the same order of magnitude as Weber himself. He has treated Weber's text as a statement about the world, and in his footnotes has compared the text with the world. He is the only annotator who sometimes says, "Here Weber seems to be mistaken," and then goes on to say what the facts of the case are and what it means for the theoretical point under discussion.

Talcott Parsons annotated the section which gives descriptive concepts about the types of economic organization. Parsons treats the text as a system of concepts rather than as a theory about the world. When he finds Weber in error, the authorities quoted against him are other theorists—for instance, he quotes Oscar Lange in his criticism of Weber's old-fashioned treatment of pricing under socialism. Parsons is much inclined to fuzzy discussions of the relation between the meanings of words in English and those in German, and between common German meanings and Weber's neologisms. The tendency of sociological theorists to discuss social life in an autistic language apparently has ancient and honorable roots.

The highest level of theoretical discussion that the other annotators reach is discussion of the fuzz of translation. They treat the text as a reflection of Weber's mind rather than of the world and only document things that indicate what Weber thought rather than using the footnotes to tell us what is true. The annotations are scholastic in the bad sense of staying within the sacred tradition itself without relating the tradition to the world.

In contrast, I would give Rheinstein about the amount of credit I give Weber for writing the sociology of law section. The section is about twice as valuable with the notes as it was when Weber wrote it. Parsons I would give considerably less credit than Weber, while the others should get credit for the drudge work of translation and cross-referencing within the sacred tradition itself. Much more recognition should be given for this type of work. (But I hope I someday write a book that seems worth annotating to a man of Rheinstein's caliber.)

The footnotes are in the worst possible place. Before I tell you where they are (you would never guess), I want to say a few words about footnotes and

publishers. Only by understanding the dynamics of footnote publishing will you be able to believe what they have done with the footnotes. Like tables and graphs of data, footnotes are designed for readers who want to know whether the statements in the text are true. Thus, footnotes, like tables and graphs of data, are used in journals and books intended to be read by scholars and by practitioners in fields where it matters whether the professional is right, such as, law, medicine, engineering, and so forth. They are not used where the reader needs material that is "interesting" or "relevant," but in which they hardly care whether it is true. Thus, in journals of applied social science, in introductory textbooks, in psychiatric journals and monographs, in advertising copy, there are few footnotes.

The problem of a publisher of Weber is that he judges, correctly I imagine, that the average reader will be a graduate student who will have to answer questions on his prelims of the form: "Discuss the relations between Quakerism and this-worldly asceticism in Weber's theory of the origins of enterprises oriented to capital accounting." The student will not have to know whether Quakerism actually did produce a rational ascetic life in this world as frequently as did Calvinism (as Weber argued). Nor will he be asked whether it is true or not that the legal, economic, and technical preconditions of capital accounting were created before the Reformation in countries which never became Protestant. He gets a high pass for not making the common mistake of identifying the Protestant ethic with Calvinism, and the mistake of associating capitalistic enterprise with the spirit of capitalism. For the majority of readers, then, this will be a text, rather than a scientific work. So the publisher does not want to spend the money to put footnotes where the reader can easily consult them, namely, at the bottom of the page.

But publishers have a hard time getting "interesting" and "relevant" work without footnotes, evidence, and other "scholarly apparatus." Most people who are smart enough to write (or translate and edit) a book care about whether it is true and hope to write for readers who also care. While the author or editor fights to keep the footnotes and the evidence near the text which they support, publishers push for eliminating or hiding them. In this book, the classical conflict between editor and publisher has been resolved by splitting the difference. The footnotes are separated from the text, but printed not in the back where the reader might find them but rather about halfway between. Then, in a glorious exercise of idiocy, the reader is not told in the text where the footnotes are. The reader must find the footnotes as follows: First observe the top right of the left-hand page you are reading to obtain the chapter number; then consult the "analytical table of contents" for the pages of the notes. Or you can leaf through the pages rapidly until the number on the upper right of the left-hand page changes, and then leaf slowly back until you run into the notes. This works unless the chapter is a long one. If the chapter is long, the number you have to use is a lowercase roman numeral on the upper left of the right-hand page. If an arabic numeral appears there, use the chapter number.

So my answer to the question of whether people should still start their sociological intellectual biographies with *Economy and Society* is yes. It would be a much more enthusiastic yes if Max Rheinstein had annotated the rest of it and if the annotations were somewhere where they could be found.

Beyond Economics: Essays on Society, Religion, and Ethics. By Kenneth E. Boulding. Ann Arbor: University of Michigan Press, 1968. Pp. 302. $9.50.

The Temporary Society. By Warren G. Bennis and Philip E. Slater. New York: Harper & Row, 1968, Pp. 147. $4.95.

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Boulding tells the reader that his essays are to be regarded as "errant missiles blasting off . . . in the general direction of a more unified social science" (p. v). The effort of Bennis and Slater might be similarly described.

Those who are willing to read Boulding's collection with full awareness of the errant character of the intellectual missiles can get much from them, as from Riesman's *Abundance for What.*—or, for that matter, from the notebooks of Samuel Butler or the collected plays of George Bernard Shaw. The notion, for instance, of a "role" as a "hole" in an organization, is illuminating; and additional insights are provided by calling an organization a "related and orderly set of holes in which everything is the context for other things" (p. 131). Perspective by incongruity, in Kenneth Burke's terms, is liberally supplied. The presentation of "economic development" as primarily by "learning process" (p. 144) is obvious, once stated, but was unfamiliar to me. The very title of the essay on "expecting the unexpected" alerts the reader to expect surprising perspectives on dealing with surprises! And he gets them.

I did not find any systematic theory, or approach to, or method of, handling general systems. Indeed, ironically enough, one of Boulding's insights on a peripheral matter is highly apropos! He argues that we need "specialized intellectual middlemen" and that such "middlemen unfortunately seldom receive the status or credit which their function in society deserves . . . despised by the specialist as shallow . . . even when performing a vital intellectual function" (p. 147). The examples he gives are of librarian and bibliographer. The question which springs to mind is: could an editorial middleman have pulled out the general characteristics—obvious no doubt to Boulding, but hardly communicated to the reader—in his work? Someone should do for him what such writers as Abba Lerner did for Keynes. Although Boulding discusses differential reward systems and although he emphasizes learning theory, he does not tell us how intellectual journalists can be rewarded for the kind of reorganization he needs or how we can learn (especially if our training has not been in his branch of economics) to get the general pattern on which his aperçus are probably based.

Such reorganization would probably make a separate book out of the last two parts. Here are essays which in the best sense of the term are excellent sermons but which have (so far as I can see) no necessary connection with what goes before. For citizens as such, the sermons in the third part are unquestionably the most valuable part of the book.

The contrast with the Bennis and Slater book is devastating for the latter. Such unity as they give us is supplied by the idea referred to in their title; we live, they say, in a society where relationships are increasingly temporary, and in which many of us must learn to fall in love quickly, fall out of love quickly, commit, uncommit, and recommit ourselves with minimum pain and maximum ease. In the context of history, one doubts the unique-

ness or general truth of what they say—although no doubt many professional men have experienced some part of what they are talking about since 1941. Nevertheless, commitments to professions by "cosmopolitans" may, for anything Bennis and Slater tell us, have increased, while commitments to localities or organization have decreased. They fail to make allowance for the fact that the long-distance telephone and the jet airplane make it possible to keep up commitments and contacts in a way impossible until recently.

There is nothing to show that the trend they single out will continue or that in times past (e.g., the Ottoman Turks in the days of their conquests, the citizens of Germany during the Thirty Years' War, etc.), there have not been groups with much more temporary commitments than our own; for instance, slaves—who were also tutors and scribes—in various periods.

Otherwise, the book throws together in confusingly self-contradictory and unanalyzed procession a large number of clichés and observations, most of which at some time or another are true, but which also at some time or another are false. Sociologists will be interested to learn that "only a sociologist could make . . . the mistake" of attributing divorce to the decline of significance in the modern family (p. 88). Evidence is not supplied, either for the frequency of this mistake among sociologists or for its absence among nonsociologists. The relevance of the contention to the argument happens also to be opaque.

One is overwhelmed with such profound insights as " 'revitalization' [means] all the social mechanisms that stagnate and regenerate as well as the process of this cycle. The elements of revitalization are . . . an ability to learn from experience . . . an ability to direct one's own destiny" (p. 71). The authors make considerable play (p. 61) with the allegation that the academic man has regarded "with dark suspicion . . . the world of reality . . . particularly monetary reality" and deprecate the tendency of academics to be either "rebellious critics" or "withdrawn snobs" (p. 61). Things, they think, are better now. But in reading their lucubrations, I am reminded of one of my clients (who had unwillingly inherited me as a consultant from his predecessor) who said, very sensibly, that he regarded all social science consultants with suspicion because when they were not being foolishly obvious, they were being foolishly pretentious. If one evaluates Bennis and Slater as producers of an ideology, the contrast even with McLuhan (whom they seem to regard as a predecessor or competitor) is considerable. He has a sense of poetry which they lack. Sinclair Lewis should be living at this hour! What he did to George Babbitt and Elmer Gantry would pale into insignificance if he were to take on Bennis and Slater!

Tradition and Revolt: Historical and Sociological Essays. By Robert A. Nisbet. New York: Random House, 1968. Pp. 308. $4.95.

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It is a lamentable observation about American sociology that this collection of essays is so welcome a publication. The sad fact is that most of Robert Nisbet's papers have not been available until now to a wide sector of sociologists: they were originally published in journals, not the common stock of

sociological reading, and have gone comparatively unnoticed. At least a half dozen of the fourteen essays in this volume are remarkable contributions to the analysis of contemporary society and should be obligatory for all of our graduate students. For the past twenty-five years, Professor Nisbet has combined an understanding of political philosophy and history with the analysis of the major issues which have preoccupied sociologists in their efforts to provide an intellectual perspective toward modern societies. Almost alone among us, he has had the knack and the wisdom to see how the persistent issues of political philosophy have been recast by sociological analysis and to place the description of modern society in the context of those abiding issues.

In this volume, Random House has reprinted fourteen of Nisbet's essays beginning with a 1943 paper, "Rousseau and the Political Community," and ending with "Conflicting Academic Loyalties," a 1967 paper. While these touch a variety of subjects, they are united by a common perspective of sociological analysis and Burkean conservative philosophy. As analysis and description, Nisbet's diagnosis, detailed in his *The Quest for Community*, is another version of the *Gemeinschaft-Gesellschaft* thesis: "the older primary centers of association have been superseded in institutional importance by the great impersonal connections of property, function, and exchange. These connections have had a liberating influence on the individual" (p. 62). His political philosophy is expressed in several of the essays, including the well-known "Conservatism and Sociology." The transfer of allegiance from intermediate institutions such as family, church, class, and kin society to the state has meant both the centralization of power in political institutions and the self-alienation attendant on individualism resulting from the loss of community with a primordial social group. "A genuine philosophy of freedom is inseparable from some kind of pluralism; it is inseparable from a distinction between state and society" (p. 47).

These ideas are woven through the variety of essays in this volume. In the papers dealing with political philosophies, these themes appear as issues of the power of the state and the virtues and vices of pluralism and monism. The essays on Rousseau and on conservatism, plus a paper on the French writer ("The Politics of Pluralism: Lammenais"), and a superb one on American politics ("Power and the Intellectual") are, taken together, a significant addition to the analysis of political ideas and their sociological import. In two brilliant essays, "The Decline and Fall of Social Class" and "Kinship and Political Power in First Century Rome," Nisbet has given two examples of the decline of communal institutions and their replacement by an individualism based on state power. Two other papers, "Sociology as an Art Form" and "History and Sociology," are excellent discussions of the methodological and ideational sources of sociological perspectives and limitations. Three papers on current problems of academic institutions seemed anticlimactic and below the quality of the rest of the volume.

While I must admire the organization and significance of the questions Nisbet poses and the large historical frame on which he works, the viewpoint maintained seems to me too romantic a myth for sociologists to still use. Modern society has too many pluralities of ethnicity, of familial ties, of racial conflict, and too many instances of the limits of central power, in organizations or governments, for us to use the Durkheim-Toennies formulations as anything but weak and imperfect models. Better history reveals to

us that past centuries have by no means been the communal utopias of *Gemeinschaftliche* sentiments but that "society" has seldom been like the first chapter of an introductory textbook. Anarchy, alienation, conflict, and insecurity appear in Marc Bloch's Hobbesian accounts of feudal Europe as they do in peasant villages of contemporary developing areas. The life of man has been nastier, more brutish, and shorter than in much of modern society. Nisbet's dichotomies are too vast and too starkly oppositional to catch the multiplicity and ambivalence of social life; his abstractions of "State" and "Society" too reified to reveal their tenuous quality and close interaction. That interaction has been one of the great themes of much of modern political sociology in its empirical phase, from Marx to Seymour Lipset.

Generally, I take a dim view of collections of man's essays unless they present a new theme or are revised to be-to-date. This is an exception. It brings to visibility papers whose thought, literacy, and style should never have been obscured. If I am unconvinced by the argument, the author's clarity and insight have made me more aware of my own thoughts through understanding their opposites. That is no mean feat and quite enough for one book.

Revolution and Counterrevolution: Change and Persistence in Social Structures. By Seymour Martin Lipset. New York: Basic Books, 1968. Pp. xiv + 466. $10.00.

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This book is big. Heavy to the hand, it ranges across much time and all the continents, consecrating men and man in the exhaustive and informative footnotes whose style Professor Lipset had earlier made famous in his *Political Man*. In a clean and readable prose rarely lightened by a smile or an irony, the author weaves his determinations regarding methods and the theoretically significant into a bolt of whipcloth, heavily sized with data culled from a dazzling variety of sources. The author's self-awareness pays off, for this collection of essays, originally published between 1964 and 1968 in various journals and anthologies, falls into a coherent whole, a true book examining the same essential approaches and materials from many different perspectives.

The volume's technique is properly established in the first chapter, "History and Sociology: Some Methodological Considerations." The argument, simply put, is that "all social science is comparative." The data for such comparisons must come from historical analysis as well as the generation of other kinds of empirical data on contemporary societies. Thus, sociologists should infuse historical learning with their disciplinary questions, and historians in turn should become sensitized to the ways and concerns of the social sciences. Rising to his own challenge, Lipset then seeks to explain variance between the United States and Canada in terms of the revolutionary experience of the former and the counterrevolutionary national origins of the latter—hence, the book's title. The comparative exercise, however, is by definition a testing of theory, whether in the rudimentary sense of establishing the explanatory utility of a set of categories, or the more sophisticated

one of predicating relations among variables within a dynamic system bounded by *ceteris paribus*. Lipset, in full recognition of the theory-methods link in comparison, also sets out in this first chapter to show that "structure and values are clearly interrelated" (p. 63). For him, "any value system [is] clearly derivative from given sets of historical experience," and by implication, values are in the independent position vis-à-vis political and economic institutions, seen as dependent. "In comparing the United States and Canada the emphasis has been more on the effect of values on political development than on economics. . . . The next chapter . . . examines the changes in the value system which may foster emergence of an entrepreneurial elite [in Latin America]" (p. 63).

Chapter 4, "Issues in Social Class Analysis," is a highly competent synthesis of the history of thought concerning stratification and politics, sometimes brilliant in its deft crystallization of schools of thought and always incisive in revealing how the several persuasions differ among themselves. Lipset concludes that the functionalist and Marxist approaches to stratification share the view that political power is a social utility and that both join power and stratification theory (p. 148). With this linkage set, and with his stated preference for a multidimensional approach to stratification, Lipset is now ready for the remainder of his book. He turns to "Class, Politics, and Religion in Modern Society: The Dilemma of the Conservatives," and then to four chapters on "political cleavages" in developed as well as developing societies, and finally to studies of "three pioneers of comparative analysis," Harriet Martineau, Moisei Ostrogorski, and Robert Michels.

Such sweep must always lead an author into trouble. The most obvious difficulty is that nobody can cover so many diverse cases without some misinterpretations arising from insensitivity to cultural particularities or simple inability to control all the factual material. For example, a passing reference to the twenty-three independent republics of the Western Hemisphere is forgetful of Jamaica, Trinidad, Guiana, and the other Caribbean detritus of empire. This illustration is chosen because it is plainly unimportant to the book's theses, although other slips are more subtle and would demand an unattainable area knowledge for their avoidance. This reviewer suggests that the book not be read in a search for such flaws but with full appreciation for its grasp and virtuosity.

Nevertheless, doubts arising from other sources troubled this reviewer. I suspect that Lipset had both *Zeitgeist* and organizational problems with this book. The articles must have been in preparation from about 1960 to 1966 or 1967. Although some passing references to Vietnam and other American crises appear, the tone seems to echo days of greater national self-confidence, when we were all secure in the knowledge that developed was very different from underdeveloped. An old-fashioned air envelops us as we read passages still taking it for granted that ideology dies as industrialization blossoms. Perhaps Proudhon and Bakunin and Croce and Mosca no longer concern us, but Marx remains alive, as are Marcuse, Fanon, Cleaver—and even Bell, Howe, Kristol, and Lipset. Direct analysis of the major crises of the second half of this decade are not readily found in this book, although it undoubtedly has much to say on these matters if the reader wants to make the effort of fitting the cloth to the new shapes.

The greatest unease for this reader concerns an occasional lack of internal fit. For example, on page 180 we read the bald statement "it is not really

possible to speak of a 'Western' political system." Earlier, on page 157, we find that "an unpolitical Marxist sociology would expect the social class relationships of the United States to present an image of the future of other societies that are moving in the same general economic direction." Lipset leaves no doubt that he shares the view that the more industrially developed society shows to the less developed one "the image of its own future," in Marx's words. The strength of a historical sociology is precisely its ability to permit satisfying intellectual resolutions of such questions as the degree of westernization "necessary" in modernization, and the difference between modernization and development. The book has altogether too many un-demonstrated assertions. I will cite only one more: "The more developed nations not only can avoid the experiences of the less developed Communist societies, but they can and are moving toward socialism while preserving political freedom" (p. 238). This reader, for one, found no satisfying support for that comforting statement so reminiscent of old beliefs in the inevitabil-ity of certain social processes.

Cast in the mold of *Political Man*, this book will probably not have the same impact. Perhaps times have changed, and a faith in the virtues of democratic practice is no longer a brave and praiseworthy stand. Perhaps the day belongs to the gut reaction and not to reason. Whatever the case, and given its limitations, *Revolution and Counterrevolution* is a collection of lasting merit, to my mind a marked intellectual advance over *Political Man* testifying to Lipset's continued growth. May he someday receive the same warmth of treatment that he accords Harriet Martineau in the most touch-ing, modest, and affecting essay of the book.

La Révolution introuvable: réflexions sur les événements de mai. By Raymond Aron. Paris: Librairie Arthème Fayard, 1968. Pp. 187. Fr. 15.

Le Mouvement de mai ou le communisme utopique. By Alain Touraine. Paris: Editions du Seuil, 1968. Pp. 298. Fr. 21.

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The eminence of these authors is enough to stimulate interest in these two case studies, published last winter, of the "events" that brought France, and especially Paris and its industrial suburbs, to a halt in May 1968. That two such opposing views of the events are not only argued but brilliantly de-fended illuminates not only the underlying issues that triggered the strike but also the differing perspectives of the observers.

Aron's text, to which his *Figaro* columns of the period are appended, takes the form of an extended dialogue between the author and French editor Alain Duhamel; its purpose is to dispel the romantic mystique in which, even after several months had passed, the May events were enshrouded. Aron views the entire sequence of events not so much as a drama as a fan-tasy. His admitted refusal to take the students seriously has its roots in what he sees as their irrationality and the absurdity of their thoughts and acts; he does not hesitate to view many of his colleagues in the same light: "Why ought one to admire professors of constitutional law who violate le-gality and find pseudo-justifications for pseudo-revolutionary structures and pseudo-innovative constitutions, none of which are capable of function-ing?" (p. 134).

Even where he places himself somewhat in agreement with the students, Aron finds their views at best naïve and at worst dangerous. In the case of university reforms, for example, he suggests various problems on which he has been outspoken himself, but when discussing specific solutions, finds that he cannot accept those that "in effect deny the intrinsic inequality [between students and professors] of the learning relationship" (p. 70).

Besides discussing the breakdown of rationality among the students and many of their teachers, Aron devotes considerable attention to the political strategy of the French Communist party and to the conservative role of the large labor unions, both of which he views as stabilizing influences during the chaos; the French government itself he criticizes bitterly for its de facto abdication of power during the latter part of May.

What to Aron constitutes a regression to pre-Marxist utopianism, Touraine interprets as evidence of a post-Marxian class consciousness based on new economic and technological features of capitalism as it is evolving in France in the late 1960s. In particular, he links the resistance of young factory workers to ultrarationalistic technology with that of young intellectuals to university programs that, given the French occupational structure, must lead them to administrative or technocratic positions in industry and government. The university itself is transformed, by processes at once subtle and permeative, from a place of learning to one of ritualistic indoctrination: "At Nanterre [the suburban campus where Touraine teaches and where, under the spirited influence of sociology undergraduate Daniel Cohn-Bendit, the events had their manifest origins] one does not live, but rather exists, or, more exactly, moves about and is exposed to a series of broadcasts, of teaching productions" (p. 99).

For Touraine, the events are but a sign of the future, a beginning; but since, as he readily admits, the utopians do not seem to have goals, platform, or program more specific than a Marcusian liberation from coercion, one wonders what it is that is being begun. Ultimately, Touraine's new consciousness, which Aron considers a puerile rejection of authority on the part of the students, is not simply utopian, but becomes paralyzingly so: "Parce qu'on ne voulait plus que la société fût un spectacle, on prit un spectacle pour la société" (p. 215).

Yet, despite the somewhat utopian evaluation of the utopians, Touraine's book repays careful reading: his analysis of the role of the factory workers in the various stages of the events is particularly insightful and acute.

The Conflict of Generations. By Lewis S. Feuer. New York: Basic Books, 1969. Pp. ix+543. $12.50.

Marshall Meyer

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The Conflict of Generations attempts a macroscopic interpretation of student unrest. A universal theme of history, Feuer claims, is generational conflict, maybe of more importance than class conflict. But unlike class conflict, which is tied to such concrete issues as wages and working conditions, generational struggle is a product of the human psyche, coming from "deep, unconscious sources"—"vague, undefined emotions which seek some issue, some cause, to which to attach themselves."

A society is ripe for student revolt, he states, when "de-authoritization" of the older generation occurs. This may result from a defeat in war, internal decay of a society, or an inability to bridge the gap between tradition and modernity. In any case, "student movements are a sign of a sickness, a malady in society."

Let me note what is most commendable about Feuer's book. First, it reflects a great deal of scholarship. The studies of the Bosnian, Russian, and nineteenth-century German student movements are especially interesting, and it is not accidental that these cases best fit Feuer's theoretical framework. Second, Feuer tries to apply one explanatory scheme to a variety of events. All too often social scientists complicate matters by applying inconsistent ad hoc explanations to fairly similar phenomena; the result is obfuscation rather than clarification.

But does Feuer's thesis work? I think not. Recent events argue very strongly against a purely psychological explanation of student revolts. Take Germany for example. Feuer claims that generational conflict was absent in the immediate postwar period because the student movement itself, not the older generation, was "de-authoritized." This was a studentry discredited by its failure of character and betrayal of intellect: it could claim no mission to redeem the others. The elders of the previous generation . . . shared much less of the national guilt than the Nazi students, for the elders had been largely displaced and spiritually emasculated by the Nazis." Now that the German student movement is in full swing, is it relevant that Germany is closer to one-party rule than at any time since 1945, or has the older generation been simply "de-authoritized" once more?

Feuer's account of Japan is likewise unsatisfying, and it is inconsistent with his interpretation of Germany. The Zengakuren emerged in 1948 because of "de-authorization" of the older generation which had lost the war. But, according to Feuer, a new generation that has "none of the experience of de-authorization of the fathers" has entered the Japanese universities, and Zengakuren has passed its zenith. The charred remains of Tokyo University testify otherwise. And there is more in store—wait until the United States–Japan mutual security pact comes up for ratification in the fall. About India, all Feuer can say is that generational revolt is directed against university authorities because of the sacredness of the family. There is no mention of appalling unemployment among university graduates or of the fact that 80 percent of ordinary A.B.'s who get jobs end up as clerks.

The most disheartening feature of *The Conflict of Generations* is its vindictiveness toward students. Feuer accuses students of amorality of political means and of destruction of both themselves and their espoused goals. What is worse, students are held responsible for too many of the world's ills. "The impact of a generational struggle and a student movement . . . was in large part responsible for the outbreak of the First World War." "The German students supplied Hitler with the leaders and heroes of his *Sturmabteilungen* [storm troopers]." "As one reviews the gloomy story of the Russian student movement, its predisposition to regicide and suicide, one has the feeling that it may have corrupted and sickened even further the already corrupt and sick Russian society." Feuer's analysis of Berkeley is even less dispassionate. "The moral level of the University of California became the lowest in the history of American education."—His evidence? Student unrest "brought to Berkeley an astonishing increase in rape. Twen-

ty-one instances of rape were reported in 1965; by 1966 this figure had increased by more than 100 percent to fifty-five cases." Come now, Professor Feuer.

Despite the book's flaws, it remains possible that Feuer's underlying premise is correct. But verification of psychodynamic propositions is tricky; one is almost compelled to rely on anecdotal evidence such as the remark of a Harvard student who could see nothing wrong with "copulating the files" in University Hall. And if, indeed, generational conflict is universal, then is it not more important to study the *structural* conditions which either diffuse this energy or focus it upon sources of discontent? Interestingly, Feuer suggests one of these conditions. In discussing students in colonial America, it is noted that "the intellectual student . . . knew that he would be presently called upon to help govern and administer his society. No barrier of generational hegemony was interposed against him, for all talents were needed." I wonder if students in the contemporary United States would remain restive if they were called upon to help govern and administer.

Black Rage. By William H. Grier and Price M. Cobbs. New York: Basic Books, 1968. Pp. viii+213. $5.95.

Andrew Billingsley

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The central thesis of *Black Rage* is that black people in America have suffered unbearable oppression at the hand of white racists and white racist institutions; that this oppression has instilled within all black people a sense of hatred of white people and self-hatred as well; and that after acquiescing in their own suffering for centuries, they are determined to throw off this oppression by any means necessary. It is a familiar thesis to readers of this *Journal.* But it has seldom been stated with such passion, eloquence, and authority. The authors have broken new ground in analyzing the dynamics of human cruelty, the oppressive potential of national character unchecked by powerful opposition, and the dysfunctional responses people often make to these forces of oppression.

The dominant experience of the black man in America, they argue convincingly, has been oppression, and the dominant response of black people to this oppression has been grief and depression.

Black men have exhibited a number of strengths, they admit, "but the overriding experience of the black American has been grief and sorrow." And they urge that "depression and grief are hatred turned on the self." The authors speak often to the universality of feelings of hopelessness and despair among black people, cutting across class, age, sex, and residence. They urge white people to try harder to understand this despair which turns increasingly to rage. "For a moment," the white reader is implored to "be any black person, anywhere, and you will feel the waves of hopelessness that engulfed black men and women when Martin Luther King was murdered. All black people understood the tide of anarchy that followed his death."

The authors are very convinced (and very convincing) that the rage which has grown out of despair and hopelessness is a healthy and permanent

feature of the black experience which will endure and take on a variety of forms as long as black people are oppressed. "No matter what repressive measures are invoked against blacks, they will never swallow their rage and go back to blind hopelessness."

While *Black Rage* is not put forward by the authors as a scholarly treatise and lacks.much of the style and specifications of traditional scholarship, it is nevertheless profoundly sociological in that it speaks to so essential an aspect of the relationship between society, subcultural conditioning, and personal response. At the same time, it is exceedingly well written—almost novelistic in quality. Little wonder that it has been made required reading by a journalism faculty of a major university as an example of good writing. It is indeed hard to imagine psychiatrists—and two of them at that—writing so lucidly and engagingly about important social problems. It must be observed that *Black Rage* came not so much from the content of the professional training and professional practices of these two bright and sensitive young men, as from the content of their experiences as black men who have felt the oppression of this racist society. This observation will strike some readers as odd, for were not Grier and Cobbs born to privileges denied many other men, and have they not surmounted and overcome all the badges of inferiority ascribed to black men of less achievement? But the reader who reacts thusly has not understood or accepted the central message of *Black Rage*, namely, that all black men have suffered and all are angry.

The book should be read thoroughly and carefully for what it is, not distorted, as many popular reviewers have done, to characterize black people as "sick" or evaluated as the last word on the black man's reaction to racism.

Black Rage is a most heuristic book and should be read by sociologists as a corrective, a stimulus, and a guide to their own perspectives and analyses of social relations.

Black Americans. By Alphonso Pinkney. Englewood Cliffs, N.J.: Prentice-Hall, 1969. Pp. xvii+226.

Jewish Americans: Three Generations in a Jewish Community. By Sidney Goldstein and Calvin Goldscheider. Englewood Cliffs, N.J.: Prentice Hall, 1968. Pp. xvii+274. $5.95.

William S. Kornblum

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When it is completed, the Prentice-Hall "Ethnic Groups in American Life Series" (edited by Milton Gordon) will be a welcome addition to the sociology and social history of ethnicity in this country. Although the volumes by Alphonso Pinkney and by Sidney Goldstein and Calvin Goldscheider are studies of groups for whom the literature is already considerable, future titles will include studies of Mexican-Americans, Chinese-Americans, White Protestants, American Indians, Puerto Ricans, and Japanese-Americans—almost all groups which have been somewhat neglected in the recent ethnicity literature. Since each volume will cover family life, generational differences, structural and cultural assimilation, and historical background, in addition to other subjects, we expect comparability among the various

volumes in the series. Indeed the promise of comparability is one of the attractive features of the series. However, despite the high levels of craftmanship which both of the present studies attain, conceptual and methodological differences between the studies limit possible comparisons.

In *Jewish Americans: Three Generations in a Jewish Community*, Sidney Goldstein and Calvin Goldscheider present some of the data from the Population Survey of the Jewish Community of Greater Providence (1963), thus purposely limiting their universe to the Jewish community of Greater Providence in the interests of replication and quantitative rigor. Basing their exploration of Jewish assimilation on changes across three generations, the authors seek, "to explore changes in the structure of an American Jewish community which reflect the emerging balance between separation and loss of Jewish identity, between Jewishness and Americanism, and, in turn between Jewish survival and total absorption." Chapters on changing demographic and social class profiles, and on mortality and fertility document most of the important trends in the Jewish adaptation to metropolitan America. Discussed with richness of detail are the movement to the suburbs which increases over three generations, the higher concentrations of Jewish Americans in professional and managerial occupations, and the relationship between between high levels of educational attainment and generation in America. Data on intermarriage and conversion presented in a chapter on the subject show that net losses through heterogamy are negligible due to a tendency toward conversion to Judaism which is especially prevalent among non-Jewish wives of Jewish men. The authors find that this trend increases with distance from the immigrant generation and, contrary to previous findings, shows little association with education when generation and age are controlled. In their chapters on religiosity, which they divide into ideological-ritualistic and organizational-cultural dimensions, the authors show that despite the growing similarity in socioeconomic behavior between the Jewish population and the general population of Providence, the institutions of Judaism retain a vitality which promises to maintain a structurally differentiated Jewish subsociety well into the future.

In contrast to Goldstein and Goldscheider's original monograph, Alphonso Pinkney's *Black Americans* is a well-executed short survey of the black man's career in this country. While he presents no new data, Pinkney diligently organizes a great deal of the literature in his chapters on "The Black Community," "Socioeconomic Status," "Social Institutions," and "Social Deviance." Inclusion of a chapter on 'Contributions to American Life," one on historical background, and another on recent developments (including the emergence of Black Power movements) makes this perhaps the most up-to-date text on the subject now available for students and general readers. In his preface Pinkney states the point of view which he consistently applies to his material: "Life in a racist society for more than 350 years has led to the formation of a vast underclass of citizens in the United States, maintained by differential access to rewards in all social institutions. The oppressed status of black people, then, is a direct result of social arrangements and practices. Therefore, the major emphasis of the present study has been placed on an analysis of the forces in American society which have been responsible for creating and maintaining the subordinate positions of black people." Although they overlap in many instances, Pinkney's consis-

Books Received

Acton, William. *Prostitution*. Edited, with an introduction by Peter Fryer. New York: Frederick A. Praeger, Inc., 1969. Pp. 251. $6.95.

Alba, Joaquin de. *Violence in America: De Tocqueville's America Revisited*. Washington, D.C.: Acropolis Books, 1969. Pp. 108. $6.95.

Alloway, David N., and Cordasco, Francesco. *The Agony of the Cities: Urban Problems in Contemporary America*. Upper Montclair, N.J.: Montclair State College Press, 1969. Pp. ii+59. $1.00 (paper).

Alston, Patrick L. *Education and the State in Tsarist Russia*. Stanford, Calif.: Stanford University Press, 1969. Pp. ix+322. $8.50.

Andreski, Stanislav. *The African Predicament*. New York: Atherton Press, 1969. Pp. 237. $6.95.

The Atlanta University Publications. Vol. 1, nos. 12–15; vol. 2, nos. 16–20. New York: Russell & Russell, 1969. Both vols. $32.50.

Baggaley, Andrew. *Mathematics for Introductory Statistics*. New York: John Wiley & Sons, 1969. Pp. 171. $6.95 (cloth); $2.95 (paper).

Baier, Kurt, and Rescher, Nicholas, eds. *Values and the Future*. New York: Free Press, 1969. Pp. xiv+527. $14.95.

Baratz, Joan C., and Shuy, Roger W. *Teaching Black Children to Read*. Washington, D.C.: Center for Applied Linguistics, 1969. Pp. 219. $5.00 (paper).

Barton, Allen H. *Communities in Disaster: A Sociological Analysis of Collective Stress Situations*. New York: Doubleday & Co., 1969. Pp. xli+352. $6.95.

Behrman, S. J.; Corsa, L., Jr.; and Freedman, R. *Fertility and Family Planning: A World View*. Ann Arbor: University of Michigan Press, 1969. Pp. 503. $12.50.

Ben-Ami, Aharon. *Social Change in a Hostile Environment*. Princeton, N.J.: Princeton University Press, 1969. Pp. 193. $7.50.

Benjamin, Bernard. *Demographic Analysis*. Studies in Sociology, no. 3. New York: Frederick A. Praeger, Inc., 1969. Pp. viii+160. $6.50.

Bennis, Warren G.; Benne, Kenneth D.; and Chin, Robert. *The Planning of Change*. 2d ed. New York: Holt, Rinehart & Winston, 1969. Pp. vii+627. $8.25.

Berman, Louis A. *Jews and Intermarriage: A Study in Personality and Culture*. New York. Thomas Yoseloff, Inc., 1968. Pp. 707. $12.00.

Berry, Brewton. *The Education of American Indians: A Survey of the Literature*. Washington, D.C.: Government Printing Office, 1969. Pp. vii+121. (Paper.)

Bie, Pierre de; Dobbelaere, Karel; Leplae, Claire; and Piel, Jacques. *La dyade conjugale: étude sociologique*. Brussels: Les Editions Vie Ouvrière, 1968. Pp. 137. (Paper.)

Birnbaum, Norman, and Lenzer, Gertrud. *Sociology and Religion: A Book of Readings*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. 452. $7.95.

Black, Charles L., Jr. *Structure and Relationship in Constitutional Law*. Baton Rouge: Louisiana State University Press, 1969. Pp. ix+98. $3.95.

Blumler, Jay G., and McQuail, Denis. *Television in Politics: Its Uses and Influence*. Chicago: University of Chicago Press, 1969. Pp. xxviii+379. $13.25.

Boalt, Gunnar. *The Sociology of Research*. Perspectives in Sociology Series.

Carbondale, Ill.: Southern Illinois University Press, 1969. Pp. xxxviii+185. $5.95.

Bock, Philip K., ed. *Peasants in the Modern World*. Albuquerque: University of New Mexico Press, 1969. Pp. 173. $6.00 (cloth); $2.45 (paper).

Bonner, Charles D., M.D., ed. *The Team Approach to Hemiptegia*. Springfield, Ill.: Charles C. Thomas, Publisher, 1969. Pp. xiii+285. $12.50.

Borgatta, Edgar F., and Evans, Robert R., eds. *Smoking, Health, and Behavior*. Chicago: Aldine Publishing Co., 1968. Pp. xii+288. $10.75.

Borgatta, Edgar F., and Lambert, William W., eds. *Handbook of Personality Research*. Chicago: Rand McNally & Co., 1969. Pp. xiv+1232. $20.00.

Brearley, Molly, and Hitchfield, Elizabeth. *A Guide to Reading Piaget*. New York: Schocken Books, 1961. Pp. xii+171. $2.25 (paper).

Buss, Arnold H., and Buss, Edith H., eds. *Theories of Schizophrenia*. New York: Atherton Press, 1969. Pp. 175. $6.95 (cloth); $2.95 (paper).

Campbell, R. F.; Marx, L. A.; and Nystrand, R. O., eds. *Education and Urban Renaissance*. New York: John Wiley & Sons, 1969. Pp. xii+148. $5.95.

Canadian Welfare Council. *Social Policies for Canada, Part I*. Ottawa, 1969. Pp. 78. (Paper.)

Canton, Dario. *Materiales para el Estudio de la Sociología Política en la Argentina*. 2 vols. Buenos Aires: Editorial del Instituto, 1968. Vol. 1, pp. lxxxi+278; vol. 2, pp. 468.

Charlesworth, James C., ed. *Theory and Practice of Public Administration: Scope, Objectives, and Methods*. Monograph 8. Philadelphia: American Academy of Political and Social Science, 1968. Pp. ix+336. $2.00 (paper).

Consolazlo, William V. *The Dynamics of Academic Science: A Degree Profile of Academic Science and Technology and the Contributions of Federal Funds for Academic Science to Universities and Colleges*. Washington, D.C.: National Science Foundation, 1967. Pp. xii+190. $.60 (paper).

Corten, Andre, and Corten, Andree. *Cambio Social en Santo Domingo*. Rio Piedras: Instituto de Estudios del Caribe, Universidad de Puerto Rico, 1968. Pp. x+180. $4.00 (paper).

Czarnecki, Edgar R. *Manpower Developments: Problems and Prospects*. Iowa City: Center for Labor and Management, College of Business Administration, University of Iowa, 1968. Pp. vi+83. $1.00 (paper).

Dator, James Allen. *Soka Gakkai, Builders of the Third Civilization: American and Japanese Members*. Seattle: University of Washington Press, 1969. Pp. xiii+171. $7.95.

David, Rene, and Brierley, John E. C. *Major Legal Systems in the World Today: An Introduction to the Comparative Study of Law*. New York: Free Press, 1968. Pp. xv+528. $10.95.

Davis, David Brion. *The Problem of Slavery in Western Culture*. Ithaca, N.Y.: Cornell University Press, 1969. Pp. xiv+505. $2.95 (paper).

Deitchman, Seymour J. *Limited War and American Defense Policy*. 2d rev. ed. Cambridge, Mass.: M.I.T. Press, 1969. Pp. xvi+302. $3.95.

Devereux, George. *Reality and Dream: Psychotherapy of a Plains Indian*. Rev. ed. New York: Doubleday & Co., 1969. Pp. xlvii+615. $3.95 (paper).

Dogan, Mattei, and Petracca, Orazio Maria. *Partiti Politici e Strutture Sociali in Italia*. Milan: Edizioni di Comunità, 1968. Pp. xxxii+660. L. 5,800.

Dolci, Danilo. *The Man Who Plays Alone: The Story of One Man's Fight Against the Sicilian Mafia.* New York: Pantheon Books, 1969. Pp. xvi+367. $7.95.

Drabek, Thomas E. *Disaster in Aisle 13: A Case Study of the Coliseum Explosion at the Indiana State Fairgrounds, October 31, 1963.* Columbus: College of Administrative Science, Ohio State University, 1968. Pp. x+187. (Paper.)

Drake, Michael. *Population and Society in Norway 1735–1865.* Cambridge Studies in Economic History. Cambridge: Cambridge University Press, 1969. Pp. xx+256. $11.50.

Dreeben, Robert. *On What Is Learned in School.* Reading, Mass.: Addison-Wesley Publishing Co., 1968. Pp. xv+160. $2.25 (paper).

DuBois, W. E. B. *Darkwater: Voices from within the Veil.* Reprint. New York: Schocken Books, 1969. Pp. 286. $6.50 (cloth); $1.95 (paper).

Edwards, Allen L. *Statistical Analysis.* 3d ed. New York: Holt, Rinehart & Winston, 1969. Pp. xi+244. $7.95.

Eisner, Victor. *The Delinquency Label: The Epidemiology of Juvenile Delinquency.* New York: Random House, 1969. Pp. xiv+177. $5.95.

Elkind, David, and Flavell, John H., eds. *Studies in Cognitive Development: Essays in Honor of Jean Piaget.* New York: Oxford University Press, 1969. Pp. xix+503. $10.00 (cloth); $4.50 (paper).

Elliott, H. Chandler. *The Shape of Intelligence: The Evolution of the Human Brain.* New York: Charles Scribner's Sons, 1969. Pp. xiv+303. $12.50.

Etzioni, Amitai, ed. *Readings on Modern Organizations.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. 290. $3.95 (paper).

Etzioni, Amitai. *A Sociological Reader on Complex Organizations.* 2d ed. New York: Holt, Rinehart & Winston, 1969. Pp. xiv+576. $8.95.

Etzkowitz, Henry, and Schaflander, Gerald. *Ghetto Crisis: Riots or Reconciliation?* Boston: Little, Brown & Co., 1969. Pp. viii+212. $5.95.

Feuer, Lewis S. *The Conflict of Generations.* New York: Basic Books, 1969. Pp. ix+543. $12.50.

Freedman, Marcia. *The Process of Work Establishment.* New York: Columbia University Press, 1969. Pp. xiv+135. $6.75.

French, Robert Mills, ed. *The Community: A Comparative Perspective.* Itasca, Ill.: F. E. Peacock, Publishers, 1969. Pp. 519. $8.00.

Frieden, Bernard J., and Nash, William W., Jr., eds. *Shaping an Urban Future: Essays in Memory of Catherine Bauer Wurster.* Cambridge, Mass.: M.I.T. Press, 1969. Pp. v+222. $7.50.

Gardiner, John A. *Traffic and the Police: Variations in Law-Enforcement Policy.* Cambridge, Mass.: Harvard University Press, 1969. Pp. 176. $6.00.

Geismar, Ludwig L. *Preventive Intervention in Social Work.* Metuchen, N.J.: Scarecrow Press, 1969. Pp. ix+129. $4.00.

Ghurye, G. S. *Social Tensions in India.* Bombay: Popular Prakashan, 1968. Pp. xi+552. Rs. 72.

Ginsburg, Norton; Fullard, Harold; and Darby, H. C., eds. *Aldine University Atlas.* Chicago: Aldine Publishing Co., 1969. Pp. viii+208+102. $8.50.

Glasscote, R.; Kraft, A.; Glassman, S.; and Jepson, W. *Partial Hospitalization for the Mentally Ill: A Study of Programs and Problems.* Washington, D.C.: Joint Information Service of the American Psychiatric Association

and the National Association for Mental Health, 1969. Pp. ix+187. $6.00 (cloth); $4.00 (paper).

Glasscote, R.; Sussex, J.; Cumming, E.; and Smith, L. *The Community Mental Health Center: An Interim Appraisal*. Washington, D.C.: Joint Information Service of the American Psychiatric Association and the National Association for Mental Health, 1969. Pp. ix+156. $6.00 (cloth); $4.00 (paper).

Glennan, T. Keith, and Sanders, Irwin, eds. *The Professional School and World Affairs*. Albuquerque: University of New Mexico Press, 1968. Pp. 408. $5.95.

Glueck, Sheldon, and Glueck, Eleanor. *Delinquents and Nondelinquents in Perspective*. Cambridge, Mass.: Harvard University Press, 1968. Pp. xx+268. $8.50.

Goldschmidt, Walter. *Kambuya's Cattle: The Legacy of an African Herdsman*. Berkeley: University of California Press, 1969. Pp. 242. $7.50.

Gordon, G.; Anderson, O.; Brehm, H.; and Marquis, S. *Disease, the Individual, and Society*. New Haven, Conn.: College & University Press, 1969. Pp. 680. $17.50.

Graham, Grace. *The Public School in the New Society: The Social Foundations of Education*. New York: Harper & Row, 1969. Pp. 404.

Greenberg, Herbert M. *Teaching with Feeling*. New York: Macmillan Co., 1969. Pp. 219. $5.95.

Gregg, Pauline. *The Welfare State: An Economic and Social History of Great Britain from 1945 to Present*. Amherst: University of Massachusetts Press, 1969. Pp. 388. $8.00.

Grey, Alan L., ed. *Class and Personality in Society*. New York: Atherton Press, 1969. Pp. 190. $6.95 (cloth); $2.95 (paper).

Haas, Ernst B. *Tangle of Hopes: American Commitments and World Order*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. xiv+306. $7.95.

Hackman, Ray C. *The Motivated Working Adult*. New York: American Management Association, 1969. Pp. 206. $13.00.

Halmos, Paul. *The Sociology of Mass-Media Communicators*. Sociological Review Monograph 13. Keele, Great Britain: University of Keele, 1969. Pp. 248. $4.60.

Handy, Rollo. *Value Theory and the Behavioral Sciences*. Springfield, Ill.: Charles C. Thomas, Publisher, 1969. Pp. xii+198. $8.00.

Harr, John Ensor. *The Professional Diplomat*. Princeton, N.J.: Princeton University Press, 1969. Pp. xiv+404. $11.50.

Harvard Educational Review. *Equal Educational Opportunity*. Cambridge, Mass.: Harvard University Press, 1969. Pp. 274. $5.95.

Haskins, Jack B. *How to Evaluate Mass Communications*. New York: Advertising Research Foundation, 1968. Pp. 96. $4.00 (paper).

Hawley, Willis D., and Wirt, Frederick M. *The Search for Community Power*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968. Pp. 379. $5.25 (paper).

Hodge, William H. *The Albuquerque Navajos*. Tucson: University of Arizona Press, 1969. Pp. 96. $4.00 (paper).

Hollander, A. N. J., den. *Visie en Verwoording: Sociologische Essay Over Het Eigene en Het Andere*. Assen, Netherlands: Van Gorcum & Co., 1968. Pp. viii+138. Hfl 18,60.

Hollander, Paul, ed. *American and Soviet Society*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. 589.

Holt, Robert T., and Turner, John E. *Political Parties in Action: The Battle of Barons Court.* New York: Free Press, 1969. Pp. 311. $7.95.

International Committee for Social Sciences Documentation. *International Bibliography of the Social Sciences: Sociology.* Vol. 17, 1967. Chicago: Aldine Publishing Co., 1968. Pp. lxviii+335. $12.00.

Jones, Maxwell. *Social Psychiatry in Practice.* Baltimore: Penguin Books, 1969. Pp. 190. $1.25 (paper).

Kadushin, Charles. *Why People Go to Psychiatrists.* New York: Atherton Press, 1969. Pp. 373.

Kahn, Theodore C. *An Introduction to Hominology: The Study of the Whole Man.* Springfield, Ill.: Charles C. Thomas, Publisher, 1969. Pp. xvi+365. $12.50.

Kammeyer, Kenneth C. W., ed. *Population Studies: Selected Essays and Research.* Chicago: Rand McNally & Co., 1969. Pp. x+481. $5.95 (paper).

Kariel, Henry S. *Open Systems: Arenas for Political Action.* Itasca, Ill.: F. E. Peacock, Publishers, 1968. Pp. 148. $5.00 (cloth); $3.50 (paper).

Kassarjian, Harold H., and Robertson, Thomas S. *Perspectives in Consumer Behavior.* Chicago: Scott, Foresman & Co., 1968. Pp. 568.

Kavolis, Vytautas, ed. *Comparative Perspectives on Social Problems.* Boston: Little, Brown & Co., 1969. Pp. 271.

Keyes, Langley Carleton, Jr. *The Rehabilitation Planning Game: A Study in the Diversity of Neighborhood.* Cambridge, Mass.: M.I.T. Press, 1969. Pp. 253. $10.00.

Kitanó, Harry. *Japanese Americans: The Evolution of a Subculture.* Ethnic Groups in American Life Series. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. xv+186. $5.95 (cloth); $2.95 (paper).

Klages, Helmut. *Soziologie zwischen Wirklichkeit und Möglichkeit: Plädoyer für eine projektive Soziologie.* Cologne and Opladen: Westdeutscher Verlag, 1968. Pp. 70. (Paper.)

Klapp, Orrin E. *Collective Search for Identity.* New York: Holt, Rinehart & Winston, 1969. Pp. xvii+383. $4.95 (paper).

Kolaja, Jiri. *Social System and Time and Space.* Pittsburgh: Duquesne University Press, 1969. Pp. viii+113. $5.95.

Kolstoe, Ralph H. *Introduction to Statistics for the Behavioral Sciences.* Homewood, Ill.: Dorsey Press, 1969. Pp. xiii+299. $8.50.

Kramer, Ralph M. *Participation of the Poor: Comparative Community Case Studies in the War on Poverty.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. xii+273. $3.95 (paper).

Kunen, James Simon. *The Strawberry Statement: Notes of a College Revolutionary.* New York: Random House, 1969. Pp. 151. $4.95.

Lane, Homer. *Talks to Parents and Teachers.* New York: Schocken Books, 1969. Pp. 197. $1.95 (paper).

Leach, Edmund R. *Critique de l'anthropologie.* Paris: Presses Universitaires de France, 1968. Pp. 238. (Paper.)

LeClair, Edward E., Jr., and Schneider, Harold K. *Economic Anthropology: Readings in Theory and Analysis.* New York: Holt, Rinehart & Winston, 1968. Pp. xiii+523. $7.95.

Lyons, James, ed. *The Intellectual Legacy of Paul Tillich.* Detroit: Wayne State University Press, 1969. Pp. 115. $3.95.

McCord, W.; Howard, J.; Friedberg, B.; and Harwood, E. *Life Styles in the Black Ghetto.* New York: W. W. Norton & Co., 1969. Pp. 334. $6.95 (cloth); $2.95 (paper).

McFarland, Andrew S. *Power and Leadership in Pluralist Systems*. Stanford, Calif.: Stanford University Press, 1969. Pp. xiii+273. $7.50.

McGuire, E. Patrick. *The Forgers*. Bernardsville, N.J.: Padric Publishing Co., 1969. Pp. 250. $8.50.

MacIntyre, Alasdair, and Ricoeur, Paul. *The Religious Significance of Atheism*. New York: Columbia University Press, 1969. Pp. 98. $4.75.

Mack, J. A. *Police Juvenile Liaison: Practice and Evaluation*. Glasgow: School of Social Study, University of Glasgow, 1968. Pp. 30. $1.25 (paper).

McLaughlin, Barry. *Studies in Social Movements: A Social Psychological Perspective*. New York: Free Press, 1969. Pp. vi+497. $8.95.

Manyuk, Paula. *Sentences Children Use*. Cambridge, Mass.: M.I.T. Press, 1969. Pp. xiv+164. $7.50.

Mays, Benjamin Elijah, and Nicholson, Joseph William. *The Negro's Church*. Originally published 1933. New York: Russell & Russell, 1969. Pp. xiii+321. $11.00.

Mellon, Matthew T. *Early American Views on Negro Slavery*. Originally published 1934. New York: Bergman Publishing Co., 1969. Pp. xiii+187. $6.50.

Metzger, W. P.; Kadish, S. H.; De Bardeleben, A.; and Bloustein, E. J. *Dimensions of Academic Freedom*. Chicago: University of Illinois Press, 1969. Pp. 121. $3.95.

Meynaud, Jean. *Technocracy*. New York: Free Press, 1969. Pp. 315. $12.95.

Milner, Alan. *African Penal Systems*. New York: Frederick A. Praeger, Inc., 1969. Pp. 501. $12.00.

Morton, J. E. *On Manpower Forecasting*. Kalamazoo, Mich.: W. E. Upjohn Institute for Employment Research, 1968. Pp. v+51. First copy, gratis; additional copies, $.50 (paper).

Mussen, Paul H., and Rosenzweig, Mark R., eds. *Annual Review of Psychology*. Vol. 20. Palo Alto, Calif.: Annual Reviews, Inc., 1969. Pp. ix+516. $8.50.

National Association of Social Workers. *Changing Services for Changing Clients*. New York: Columbia University Press, 1969. Pp. 127. $3.00 (paper).

National Commission on Urban Problems. *Building the American City*. 91st Congress, 1st session, House Document no. 91–34. Washington, D.C.: Government Printing Office, 1968. Pp. xi+504. $4.50 (paper).

National Council on Crime and Delinquency. *Model Rules for Juvenile Courts*. New York: National Council on Crime and Delinquency, 1969. Pp. xii+91. $3.00.

Nearing, Scott. *Black America*. Reprint. New York: Schocken Books, 1969. Pp. 280. $7.50 (cloth); $2.45 (paper).

Nisbet, Robert A. *Social Change and History: Aspects of the Western Theory of Development*. New York: Oxford University Press, 1969. Pp. 335. $6.75.

Olivier, Georges. *Practical Anthropology*. Springfield, Ill.: Charles C. Thomas, Publisher, 1969. Pp. xii+330. $12.50.

Opp, Karl-Dieter. *Kriminalität und Gesellschaftsstruktur*. Berlin: Hermann Luchterhand Verlag, 1968. Pp. 176. DM. 19.80 (paper).

Oppenheimer, Martin. *The Urban Guerrilla*. Chicago: Quadrangle Books, 1969. Pp. 188. $5.50.

Park, Robert E., and Burgess, Ernest W. *Introduction to the Science of So-

ciology. 3d rev. ed. Chicago: University of Chicago Press, 1969. Pp. xxiv+1040. $15.50.

Pascal, Gerald R. *Behind the Screen: A Biographical Study.* Boston: Christopher Publishing House, 1969. Pp. 243. $6.50.

Phillips, Bernard S. *Sociology: Social Structure and Change.* New York: Macmillan Co., 1969. Pp. xvi+432. $7.95.

Pinkney, Alphonso. *Black Americans.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. xvii+226. $5.95 (cloth); $2.95 (paper).

Pinkney, Alphonso. *The Committed: White Activists in the Civil Rights Movement.* New Haven, Conn.: College & University Press, 1969. Pp. 239. $6.00.

Poll, Solomon. *The Hasidic Community of Williamsburg: A Study in the Sociology of Religion.* New York: Schocken Books, 1969. Pp. 308. $7.50 (cloth); $2.45 (paper).

Pollak, Otto, and Friedman, Alfred S., eds. *Family Dynamics and Female Sexual Delinquency.* Palo Alto, Calif.: Science and Behavior Books, 1969. Pp. xii+210. $6.95 (paper).

Price, James L. *Social Facts: Introductory Readings.* London: Macmillan Co., 1969. Pp. xvi+543. (Paper.)

Purcell, H. D. *Cyprus.* New York: Frederick A. Praeger, Inc., 1969. Pp. 416. $9.00.

Purcell, Carroll W., Jr., ed. *Readings in Technology and American Life.* New York: Oxford University Press, 1969. Pp. 470. $4.95 (paper).

Pym, Denis, ed. *Industrial Society: Social Sciences in Management.* Pelican Library of Business and Management. Baltimore: Penguin Books, 1968. Pp. 463. $2.25.

Quarles, Benjamin. *Black Abolitionists.* New York: Oxford University Press, 1969. Pp. x+310. $6.75.

Querido, Arie. *The Development of Socio-Medical Care in the Netherlands.* New York: Humanities Press, 1969. Pp. 118. $2.75.

Quinney, Richard. *Crime and Justice in Society.* Boston: Little, Brown & Co., 1969. Pp. 535. (Paper.)

Rabow, Gerald. *The Era of the System.* New York: Philosophical Library, Inc., 1969. Pp. 153. $4.50.

Rambaud, Placide. *Société rurale et urbanisation.* Paris: Editions du Seuil, 1969. Pp. 317. (Paper.)

Rasmussen, Steen Eiler. *Towns and Buildings.* New ed. Cambridge, Mass.: M.I.T. Press, 1969. Pp. 203. $3.45.

Raush, Harold, and Raush, Charlotte L. *The Halfway House Movement: A Search for Sanity.* Century Psychology Series. New York: Appleton-Century-Crofts, 1968. Pp. xiv+247. $5.50.

Ray, Talton F. *The Politics of the Barrios of Venezuela.* Berkeley: University of California Press, 1969. Pp. viii+211. $7.00.

Reda, Mario; Fappiano, E.; and Czikowsky, Leon, eds. *Systems and Processes: Collected Works in Sociology.* New Haven, Conn.: College & University Press, 1969. Pp. 422. $7.50 (cloth); $3.95 (paper).

Redford, Emmette S. *Democracy in the Administrative State.* New York: Oxford University Press, 1969. Pp. x+211. $5.00 (cloth); $2.25 (paper).

Resh, Richard, ed. *Black America: Confrontation and Accommodation in the Twentieth Century.* Lexington, Mass.: D. C. Heath & Co., 1969. Pp. vii+261. $3.45 (paper).

Ribeiro, Darcy. *The Civilizational Process.* Translated by Betty Meggers. Washington, D.C.: Smithsonian Press, 1969. Pp. xvi+201. $6.50.

Rieselbach, Leroy N., and Balch, George I. *Psychology and Politics: An Introductory Reader.* New York: Holt, Rinehart & Winston, 1969. Pp. xi+305. $4.50 (paper).

Rodgers, Barbara N.; Greve, John; and Morgan, John. *Comparative Social Administration.* New York: Atherton Press, 1969. Pp. 350. $8.95.

Rodgers, Brian. *The Battle against Poverty.* Vol. 1. *From Pauperism to Human Rights.* London: Routledge & Kegan Paul, 1968. Pp. 83. $1.25 (paper).

Rodwin, Lloyd, et al. *Planning Urban Growth and Regional Development.* Cambridge, Mass.: M.I.T. Press, 1969. Pp. xix+524. $20.00.

Rogers, Everett M., and Svenning, Lynne. *Modernization Among Peasants: The Impact of Communication.* New York: Holt, Rinehart & Winston, 1969. Pp. xvii+429. $6.95.

Rose, Peter I., ed. *The Ghetto and Beyond: Essays on Jewish Life in America.* New York: Random House, Inc., 1961. Pp. 504. $8.95.

Rose, Peter I., ed. *The Study of Society: An Integrated Anthology.* New York: Random House, 1967. Pp. xii+958. $5.95 (paper).

Rosen, Ned A. *Leadership Change and Work-Group Dynamics: An Experiment.* Ithaca, N.Y.: Cornell University Press, 1969. Pp. xviii+261. $10.50.

Rosenau, James N., ed. *Linkage Politics.* New York: Free Press, 1969. Pp. xii+352. $8.50.

Ruhela, Satya Pal. *The Gaduliya Lohars of Rajasthan: A Study in the Sociology of Nomadism.* New Delhi: Impex India, 1968. Pp. 296. $5.00.

Schlesinger, Benjamin. *The One-Parent Family: Perspectives and Annotated Bibliography.* Toronto: University of Toronto Press, 1969. Pp. xii+132. $5.00.

Schulz, David A. *Coming Up Black: Patterns of Ghetto Socialization.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. xiv+209. $5.95.

Scott, Benjamin. *The Coming of the Black Man.* Boston: Beacon Press, 1969. Pp. 82. $3.95.

Silverberg, James, ed. *Social Mobility in the Caste System in India: An Interdisciplinary Symposium.* The Hague: Mouton & Co., 1968. Pp. 155. Gld. 20 (paper).

Simirenko, Alex, ed. *Social Thought in the Soviet Union.* Chicago: Quadrangle Books, 1969. Pp. 439. $14.95.

Simon, Julian L. *Basic Research Methods in Social Science: The Art of Empirical Investigation.* New York: Random House, 1969. Pp. xiv+525. $8.95.

Simon, Kenneth, and Grant, W. Vance. *Digest of Educational Statistics.* Washington, D.C.: Government Printing Office, 1968. Pp. xi+136. $1.75 (paper).

Smith, Frederick R., and Cox, C. Benjamin. *New Strategies and Curriculum in Social Studies.* Chicago: Rand McNally & Company, 1969. Pp. xiii+194. $3.50 (paper).

Social Dynamics Research Institute of City College of New York. *A Relevant War Against Poverty: A Study of Community Action Programs and Observable Social Change.* New York: Metropolitan Applied Research Center, Inc., 1968. Pp. xi+275. $3.95 (paper).

Spector, Ivar, and Spector, Marion, eds. *Readings in Russian History and Culture.* Palo Alto, Calif.: Pacific Books, 1968. Pp. xi +489. $3.45 (paper).

Speier, Hans. *Social Order and the Risks of War: Papers in Political Sociology.* Cambridge, Mass.: M.I.T. Press, 1969. Pp. viii+497. $3.95 (paper).

Spergel, Irving A. *Community Problem Solving: The Delinquency Example.* Chicago: University of Chicago Press, 1969. Pp. x+342. $10.00.

Stern, Louis. *Distribution Channels: Behavioral Dimensions.* Boston: Houghton Mifflin Co., 1969. Pp. xiii+305. $4.25 (paper).

Stierlin, Helm. *Conflict and Reconciliation: A Study in Human Relations and Schizophrenia.* New York: Anchor Books, 1969. Pp. 267. $1.45.

Suarez, Andres. *Cuba: Castroism and Communism, 1959-1966.* Cambridge, Mass.: M.I.T. Press, 1969. Pp. xviii+249. $7.50 (cloth); $2.45 (paper).

Sykes, Gresham M., and Drabek, Thomas E., eds. *Law and the Lawless: A Reader in Criminology.* New York: Random House, 1969. Pp. ix+437. $4.95 (paper).

Szabo, Dennis, ed. *Criminology in Action.* Montreal: Presses de l'Université de Montreal, 1968. Pp. 464. (Paper.)

Tagiuri, Renato, and Litwin, George H., eds. *Organizational Climate: Explorations of a Concept.* Boston: Harvard University, Division of Research, 1968. Pp. viii+246. $5.00 (paper).

Tannenbaum, Frank. *The Balance of Power in Society.* New York: Free Press, 1969. Pp. xvi+368. $9.95.

Tarde, Gabriel. *On Communication and Social Influence.* Edited by Terry N. Clark. Chicago: University of Chicago Press, 1969. Pp. 324. $11.00 (cloth); $3.45 (paper).

Taylor, C. L., ed. *Aggregate Data Analysis: Political and Social Indicators in Cross-National Research.* International Social Science Council Publication 10. Paris: Mouton & Co., 1968. Pp. 265. Fr. 40 (paper).

Theobald, Robert, ed. *Social Policies for America in the Seventies: Nine Divergent Views.* New York: Doubleday & Co., 1969. Pp. xix+210. $1.25 (paper).

Thernstrom, Stephan. *Poverty, Planning, and Politics in the New Boston: The Origins of ABCD.* New York: Basic Books, 1969. Pp. xiii+199. $5.95.

Thonstad, Tore. *Education and Manpower: Theoretical Models and Empirical Applications.* Toronto: University of Toronto Press, 1969. Pp. 162. $9.25.

Toch, Hans H. *Violent Men: An Inquiry into the Psychology of Violence.* Chicago: Aldine Publishing Co., 1969. Pp. xvii+268. $7.50.

Toman, Walter. *Family Constellation.* 2d ed. New York: Springer-Verlag, 1969. Pp. viii+280. $5.75.

Toynbee, Arnold. *Experiences.* New York: Oxford University Press, 1969. Pp. ix+417. $8.75.

Turner, Francis, ed. *Differential Diagnosis and Treatment in Social Work.* New York: Free Press, 1968. Pp. xxvii+644. $13.95.

Tussman, Joseph. *Experiment at Berkeley.* New York: Oxford University Press, 1969. Pp. ix+139. $5.00 (cloth); $1.75 (paper).

Ullmann, John E., ed. *The Application of Management Science to the Evaluation and Design of Regional Health Services.* Hempstead, N.Y.: Hofstra University, 1968. Pp. vii+366. (Paper.)

U.S. Department of Labor, Manpower Administration. *Manpower Report*

of the President. Washington, D.C.: Government Printing Office, 1969. Pp. xvi+253. $2.00 (paper).

Van Hattum, Rolland J., ed. *Clinical Speech in the Schools.* Springfield, Ill.: Charles C. Thomas, Publisher, 1969. Pp. 381. $12.50.

Vincent, Clark E. *Unmarried Mothers.* New York: Free Press, 1969. Pp. x+308: $2.45 (paper).

Von Furer-Haimendorf. *The Konyak Nagas: An Indian Frontier Tribe.* New York: Holt, Rinehart & Winston, 1969. Pp. xii+111. $1.95 (paper).

Wallach, Michael A., and Wing, Cliff W., Jr. *The Talented Student: A Validation of the Creativity-Intelligence Distinction.* New York: Holt, Rinehart & Winston, 1969. Pp. ix+142. $3.95 (paper).

Walter, E. V. *Terror and Resistance: A Study of Political Violence.* New York: Oxford University Press, 1969. Pp. 381. $8.50.

Watson, Richard A., and Downing, Rondal G. *The Politics of the Bench and the Bar: Judicial Selection under the Missouri Nonpartisan Court Plan.* New York: John Wiley & Sons, 1969. Pp. xx+393. $10.00.

Waxman, Chaim I., ed. *The End of Ideology Debate.* New York: Funk & Wagnalls Co., 1969. Pp. 397. $7.95.

Weinberger, Paul E., ed. *Perspectives on Social Welfare.* New York: Macmillan Co., 1969. Pp. 458. $4.95 (paper).

White, Lynn, jr., *Machina Ex Deo.* Cambridge, Mass.: M.I.T. Press, 1969. Pp. 168. $5.95.

Wilcox, Clair. *Toward Social Welfare.* South Holland, Ill.: Richard D. Irwin, Inc., 1969. Pp. 402. $7.50.

Wilner, Daniel M.; Walkley, Rosabelle Price; and Cook, Stuart W. *Human Relations in Interracial Housing.* Originally published 1955. New York: Russell & Russell, 1969. Pp. xv+167. $8.00.

Wionczek, Miguel S., ed. *Economic Cooperation in Latin America, Africa, and Asia: A Handbook of Documents.* Cambridge, Mass.: M.I.T. Press, 1969. Pp. 566. $15.00.

Woodson, Carter G. *A Century of Negro Migration.* Originally published 1918. New York: Russell & Russell, 1969. Pp. 221. $9.00.

Woodson, Carter Godwin. *The Rural Negro.* Originally published 1930. New York: Russell & Russell, 1969. Pp. xvi+265. $12.50.

Wool, Harold. *The Military Specialist: Skilled Manpower for the Armed Forces.* Baltimore: Johns Hopkins Press, 1969. Pp. xiii+216. $8.95.

Yahr, Harold, and Pomeroy, Richard, in collaboration with Lawrence Podell. *Studies in Public Welfare: Effects of Eligibility Investigations on Welfare Clients.* New York: Center for the Study of Urban Problems, Bernard M. Baruch College, City University of New York, 1969. Pp. viii+83. (Paper.)